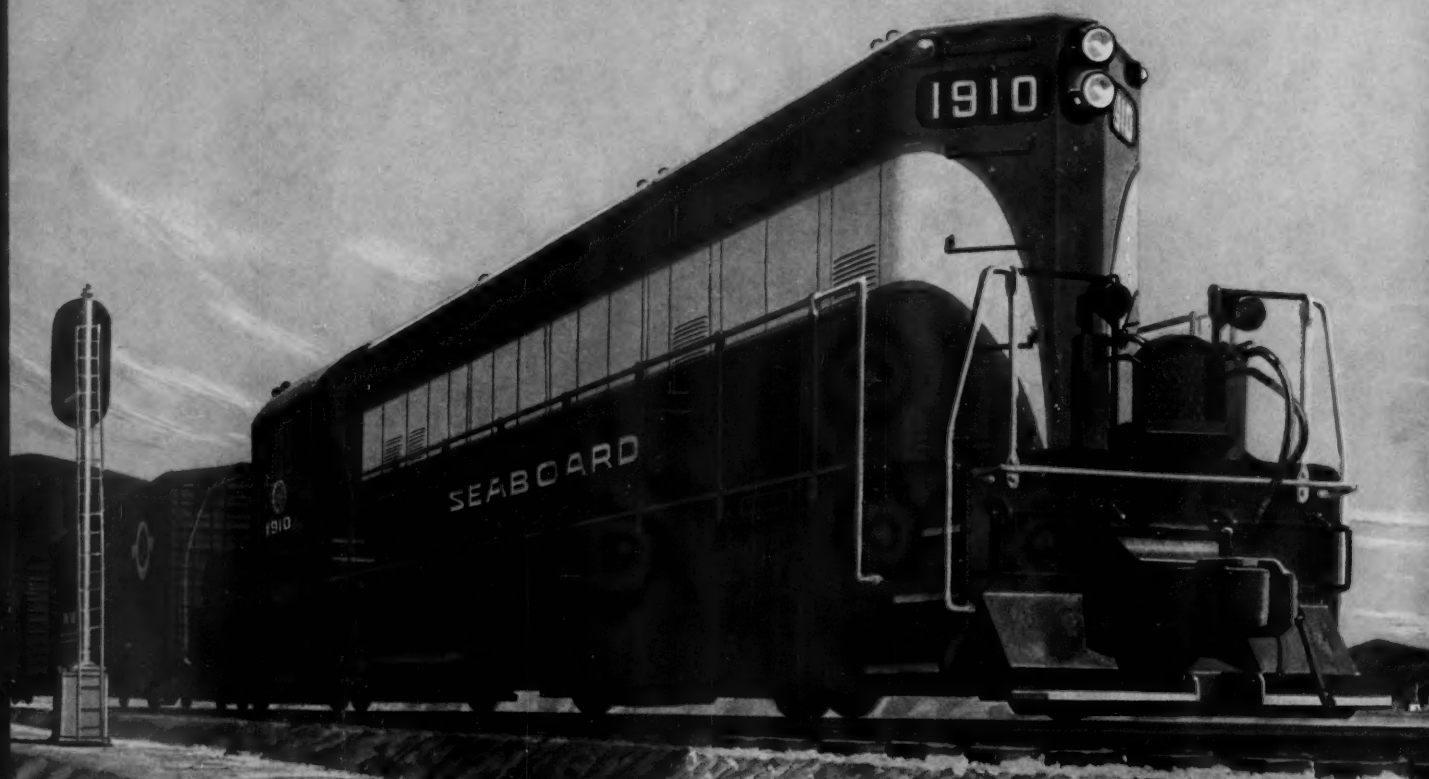


OCTOBER 17, 1955

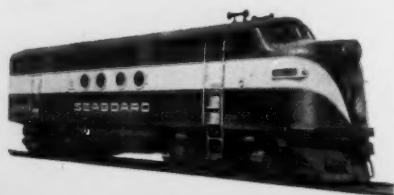
What Differentials in Rates? . . . p. 32

RAILWAY AGE

One of Five Simmons-Boardman Railway Publications



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and ECONOMIZE**



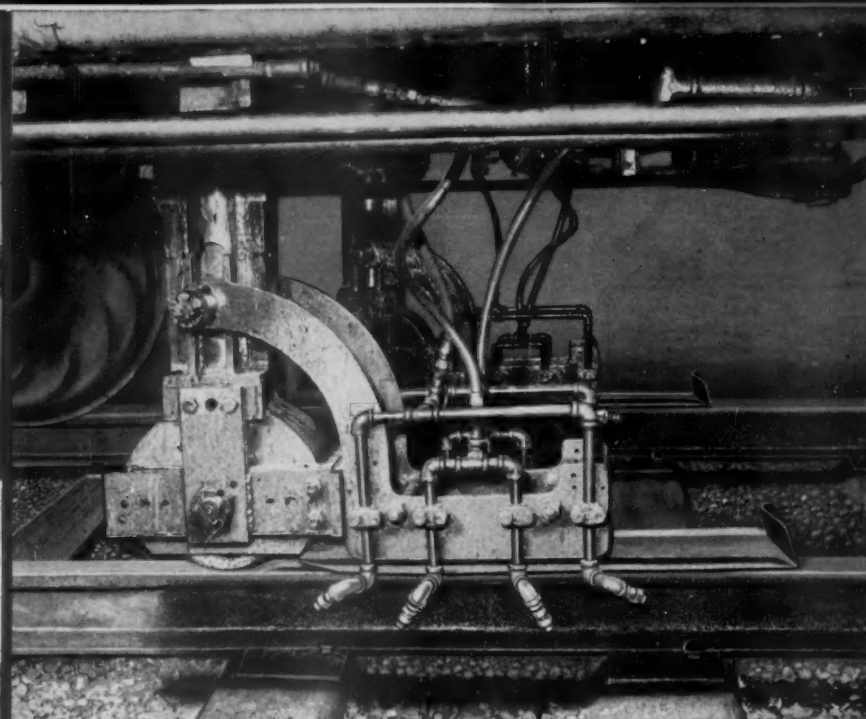
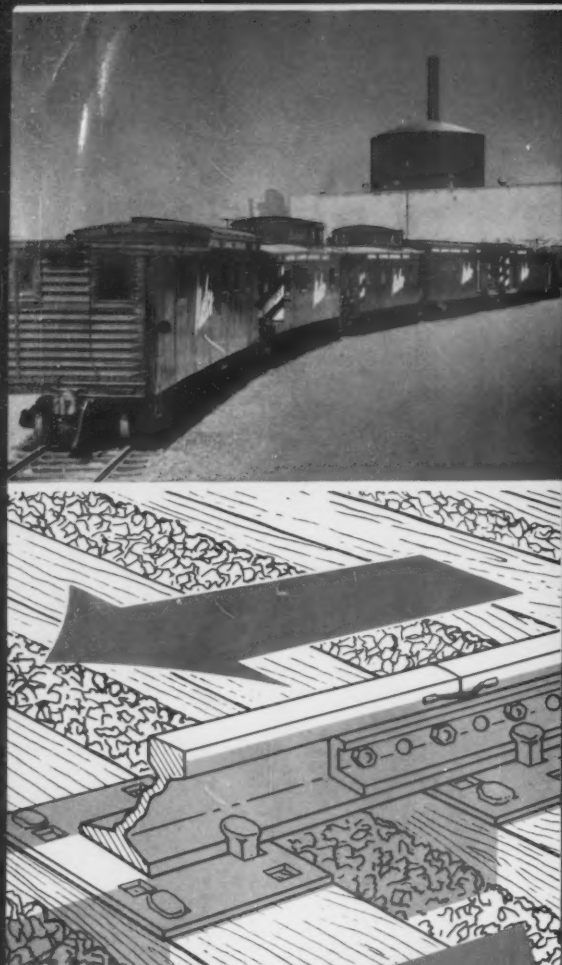
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October 17, 1955

Vol. 139, No. 16

Week at a Glance

Riss & Co. can haul explosives and so can certain other truckers, at least for five years, under the terms of an ICC decision. Contentions of railroads and other parties that movement of explosives over public highways by vulnerable trailer trucks is a safety hazard, the commission said, were not supported by "convincing evidence." 7

Consignees must clean cars or be liable for heavy penalties, if the ICC goes through with an idea being seriously weighed which would result in a request to Congress to enact legislation to this end. 8

FORUM: Modern transportation textbooks are needed badly, to give today's students a realistic picture of today's conditions in the industry. "Dated" books, no matter how soundly reasoned, don't meet the situation created by the bitterly competitive conditions now prevailing in an industry once regarded as requiring monopoly regulation. 29

Dispatcher control of wayside radio stations is helping the Missouri Pacific to maintain on-time performance on its line from Kansas into Pueblo, Colo. Operators control the wayside stations normally but at several stations which are closed for one or two tricks the dispatcher can take over and maintain touch with trains anywhere on the line. 30

What differentials in rates meet today's competitive conditions? That question is discussed by W. G. Scott of the Railway Association of Canada in the prize-winning essay submitted by him in the recent contest on this subject conducted by *Railway Age* and sponsored by Monon President Warren Brown. 32

Santa Fe cools "piggybacks" with a portable dry ice cooling unit that aids tremendously in successful handling of loads of perishables. 37

"Speedboxes" with dry ice compartments are the



How to switch 2½ million motorists to railroad travel

This year there will be over two billion travelers who are potential rail passengers. These are the motorists who will drive more than 520 billion miles in inter-city driving. This passenger potential is not wishful thinking—but sound facts and figures from the AAR and ICC.

If just one-tenth of 1% of this potential is converted to rail travel, railroads will benefit by an additional two and one-half million passengers! And it can be done.

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to the Hertz downtown office. These facilities will provide a car immediately for those passengers arriving at the terminal and enable departing passengers to make car reservations at their destination points.

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Current Statistics

Operating revenues, eight months	
1955	\$6,589,987,829
1954	6,194,297,536
Operating expenses, eight months	
1955	\$4,971,230,325
1954	4,939,611,628
Taxes, eight months	
1955	\$ 718,704,132
1954	584,152,273
Net railway operating income, eight months	
1955	\$ 732,547,087
1954	500,672,194
Net income, estimated, eight months	
1955	\$ 582,000,000
1954	349,000,000
Average price railroad stocks	
October 10, 1955	88.55
October 12, 1954	70.10
Carloadings revenue freight	
Thirty-nine weeks 1955	28,108,644
Thirty-nine weeks, 1954	25,275,120
Average daily freight car surplus	
Wk. ended Oct. 8, 1955	5,610
Wk. ended Oct. 9, 1954	54,498
Average daily freight car shortage	
Wk. ended Oct. 8, 1955	20,073
Wk. ended Oct. 9, 1954	2,195
Freight cars on order	
September 1, 1955	52,803
September 1, 1954	13,013
Freight cars delivered	
Eight months, 1955	22,820
Eight months, 1954	27,700

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Week at a Glance CONTINUED

Missouri Pacific's way of meeting the need for dependable low-temperature handling of small lots. **38**

PRR's way of handling steel on open cars is somewhat different from techniques developed on other roads. Either flat steel or coils, or both, can be loaded on the skids, and metal hoods are provided for weather protection. **39**

Probing protective coatings, Battelle Memorial Institute scientists found how deeply they penetrate and how effective the rust-resisting medium is at various depths. **40**

Revenue and Expense Tables for Class I roads for August and the first eight months of 1955 show continuing improvement over last year. **50**

BRIEFS

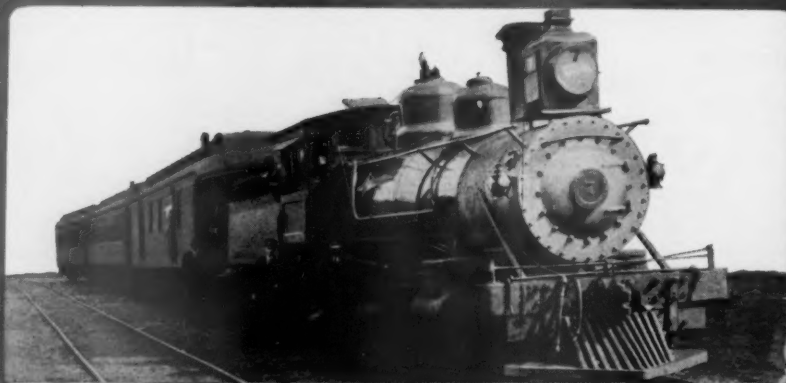
Barge operators will benefit — at the taxpayers' expense — from a new government-built Calumet Sag channel at Chicago, linking the Great Lakes with the Illinois-Mississippi rivers, on which work is about to begin. Cost? Only \$188 million according to present estimates.

Miles run per hot box, in freight operation, has improved 25 per cent in the past three years for the warm season—May through October—and 78 per cent for the November-April period.

Why Change the National Transportation Policy?

That's the title of an essay contest sponsored by the Associated Traffic Clubs and limited to traffic club members.

Truck hits train—five dead! Only new angle is the time and place: West Newton, Pa., October 4. Rigid national safety rules are mandatory for railroads, but in many states there's nothing but the owner's conscience to apply them to highway vehicles.



This handsome veteran, No. 7 of the Louisville and Nashville, paused to have its picture taken sometime around the turn of the century. It produced a tractive effort of 22,700 lbs., saw service for the L & N until 1932.



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ESSO KP Compound—hypoid
gear lubricant

DIOL RD—Diesel lube oil
COBLAX—traction motor gear
lube
VARISOL—Stoddard Solvent
SOLVLESSO—Aromatic solvent
ESSO Weed Killer
ESSO Hotbox Compound
AROX—pneumatic tool lube

CYLESSO—valve oil
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Asphalt
Cutting Oils
Rail Joint Compounds
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RUST-BAN—corrosion preventive



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Intra-RR Competition Criticized

Warren Brown tells transport conference that management, as well as legislative restriction, is at fault

Strong competition among railroads for traffic already moving by rail has been criticized by Monon President Warren W. Brown.

In a speech before a recent Marquette University transportation conference, he declared that railroads are continually trying to find new ways to take business away from other railroads when they should spend "more time analyzing areas in which they can move to combat competition from other methods of transportation."

He blames both legislative restriction and railroad managements for this situation.

Public relations is one field where railroad management can improve its competitive position, Mr. Brown said. Railroads need strong, active "missionary public relations" more than any other American industry, he emphasized. The primary function of public

relations is to guide a railroad toward adopting policies the users and the communities want, the Monon president added.

Other Speakers—Other conference speakers included James K. Knudson, legal counsel of the Transportation Association of America and former member of the Interstate Commerce Commission. He said tight control over rates is in the public interest and should not be relaxed. Regulation, he added, should be extended to include private and exempt carriers.

The opposite view on regulation was expressed by Harry D. Fenske, transportation consultant and former vice-president of Great Lakes Steel, who said he favors removal of all government controls except maximum and minimum rate regulation.

The Weeks Report contains "the most deadly program ever offered to

the American people," charged C. J. Williams, vice-president, American Trucking Associations. He said the committee fell "hook, line and sinker" for the railroad story. Adoption of the committee's views could only result in "dog-eat-dog competition," he declared.

Air lines have little or no prospect of competing with railroads for freight traffic, said Myles E. Robinson, associate director of air transport economics, Air Transport Association. He went on to explain that air freight rates, even with the most modern planes, can hardly go much below 20 cents per ton-mile.

He added that with the coming of the "jet age" many large aircraft will become obsolete for passenger service. These planes would be difficult to sell and could be converted to freight use, he said, and predicted that air freight eventually will take a sizable chunk of railway express traffic.

Competitive Transport

ICC Gives Truckers Rights to Haul Explosives

Rejecting pleas of railroads, public authorities and interested private organizations which made presentations to the effect that explosives, from a safety standpoint, are not suitable for transportation over highways, the Interstate Commerce Commission has approved in part applications of Riss & Co. and three other truckers for authority to transport explosives.

The commission made no finding on the general safety question, as it had been advised to do by Examiner B. E. Stillwell, whose proposed report contained a recommended finding that truck transportation of explosives, "relatively speaking, provides no greater hazard to the public than transportation of such commodities by rail." (*Railway Age*, May 4, 1953, page 12.)

The commission referred to protestant contentions that the proposed operations would "add greatly to highway problems and accidents," but went on to say: "There is no convincing evidence this would be true. While we concur generally in the examiner's findings we see no need to make similar findings here."

New Policy—At the same time, however, the commission determined that it should place a five-year limit on the certificates issued. "Issuance of such limited-term certificates and permits," the report explained, "will enable us to review a carrier's safety



"IMPACT-O-GRAPH," new training aid designed specially for the Pennsylvania to record freight-car speed during coupling operations, is being explained by Park M. Roeper (left), superintendent of the PRR's New York division, to John J. McCormack,

freight conductor. Special demonstrations of proper freight-car handling are being given in various PRR yards and stations in the New York metropolitan area during October. Mr. Roeper has just been appointed New York regional manager.



NEARING COMPLETION is this \$700,000 diesel servicing shop of the Canadian Pacific in St. Luc yard, Montreal. Equipped with facilities for maintenance of Montreal-assigned locomotives, the shop, third of its type for the CPR, is expected to be in use early next month. The three-level shop

occupies an area of about 20,000 sq ft and is made of steel frame and asbestos-cement walls with two through tracks running its entire length. One feature is a wheel-truing machine which can restore contours of worn flanges and treads without removing wheels from trucks.

record when and if renewal of such operating authority is sought."

This "new general policy" drew from Commissioner Freas a dissenting-in-part opinion. He thought there was no basis for such a policy. He suggested, instead that the commission "should inaugurate a more vigorous enforcement program, including the institution of revocation and criminal proceedings, whenever it is deemed appropriate; continue to deny extension applications to carriers who disregard or violate our safety rules; and, if necessary, promulgate more stringent safety regulations."

Riss Case—The commission deferred issuance of a certificate to Riss because of the investigation of that company's operations now pending in another commission case. Thus the Riss application was reopened for further hearing solely on the question of Riss' fitness to conduct the operations which the present report found required by public convenience and necessity.

The Riss application, the title case of those disposed of in the present report, is docketed as No. MC-200 (Sub-No.84). The operations approved from the public convenience and necessity standpoint (which Riss will continue to conduct under temporary authorizations until the fitness matter is determined) are between the Naval Ammunition Depot at Earle, N.J., and like depots at Crane, Ind., and Hingham, Mass.

"Consideration will be given later," the commission said, "to terminating all of Riss' temporary authorities which do not cover the above-mentioned operations and which have been extended until such time as there has been a final determination in No. MC-200 (Sub-No.84)."

Certificates granted now for transportation of explosives go to Interstate Motor Freight System for operations between Chicago and the

Hingham depot and points within three miles of the depot; to Spector Motor Service, Inc., for operations between the Crane and Hingham depots and points within three miles of each; and to Eastern Motor Express, Inc., for operations between Chicago and the Earle depot and points within three miles of the depot.

In addition, general-commodity rights were approved for five other motor carriers, authorizing service to the 832nd Air Force Specialized Depot at Pauline, Kan., as an off-route or intermediate point in connection with their present regular-route operations. The five are: Capitol Truck Lines, Wheelock Bros., Union Transfer Company, Pacific Intermountain Express Company, and Mid-States Freight Lines. All of the 24 applications dealt with in the commission's report were otherwise denied.

Truckers Held Unethical In Attacks on Railroads

Trucking industry attacks on the Cabinet Report and on railroads generally were assailed as unethical by Karl S. Wright, president of the Great Lakes Regional Advisory Board, at the board's recent Detroit meeting.

Mr. Wright, general traffic manager of the Carborundum Company, charged "the truckers are declaring that railroad lobbyists killed the highway bill by inspiring phases of it that would throw the burden of the bill's cost on the truckers. Additionally, they are declaring that the so-called 'Cabinet Report on transportation is railroad inspired."

"Such statements," Mr. Wright asserted, "go beyond the ethical. They are not good for the transportation industry."

He urged the railroads, in replying to such attacks, to avoid such tactics

while "maintaining their position that the others are wrong" both as to the highway bill and the Cabinet Report "and in some other phases of the transportation industry to which truckers have wrongly and vigorously alluded."

At his suggestion, the board adopted the following recommendation: "We as shippers disagree with one mode of transportation criticizing the programs and undertakings of others."

Caleb R. Megee, representing the Car Service Division of the Association of American Railroads, told the meeting that a quicker turn-around of cars would ease the shortage situation. He predicted that car shortages will last the rest of the year and said getting back at least to 14 days for turn-around, instead of the present 15.3-day average, would be a "blessing."

Car Service

"Heavy Penalties" Threat Enters ICC Clean-Car Talk

The Interstate Commerce Commission has warned shippers it will consider seeking legislation "providing for heavy penalties upon those responsible for failure to completely unload cars," unless voluntary efforts bring about material improvement in that situation.

The warning was embodied in identical telegrams the commission's Division 3 sent October 7 to Lowe P. Siddons, president of the National Industrial Traffic League, and C. L. Denk, president of the National Association of Shippers Advisory Boards. The telegrams were signed by all members of the division—Chairman Arpaia, and Commissioners Clarke and Freas.

Previous Call—They recalled that the division, in July 14 telegrams, had previously called the "critical car situation" to the attention of Messrs. Siddons and Denk and had urged voluntary cooperation on measures to relieve the situation. The October 7 messages then went on to say:

"Although results have been gratifying, the commission is still concerned over the continuing shortage of freight cars. Certain receivers are contributing to the shortage because of the failure to completely unload cars before returning them to carriers for further utilization. Failure to completely unload cars and remove dunnage, bracing, debris, etc., results in serious delay to the car. . . ."

"Therefore the commission again urges your full cooperation through your clean car or other appropriate committees to correct this serious situation and expedite return of freight cars to transportation service in such condition as to be immediately available. . . ."

Then came the "heavy penalties" threat, in which connection the commission must have had in mind legislation providing fines for failure to completely unload cars. There has been mention of applying demurrage charges to cars not completely unloaded, but new legislation would not be required for that. Presumably, the commission now has power to issue an order requiring railroads to leave on demurrage cars not completely unloaded. Generally, the railroad position has been that they can do this themselves, but it has not been done except, perhaps, in isolated instances.

Law & Regulation

Prior Calls for Harmony in Transport Industry

"Socialization or federal control" lies ahead for the transportation industry if opposing factions do not solve common problems through cooperation, Frank O. Prior, president of Standard Oil Company of Indiana, said in Houston recently.

Addressing a session of the Southwest Institute of Transportation sponsored by the Transportation Association of America, Mr. Prior called for an objective approach to these problems. A vice-president and director of TAA, Mr. Prior said transportation men must improve their service to the public to win its support.

He said present transportation laws are a "hodgepodge mixture of good and bad" but warned that "a blanket rewrite is not the best solution." He said the recommendations of the Weeks Committee should have been presented to Congress—which he added has often been reluctant to tackle transport problems because of split-ups within the industry—for individual consideration rather than in the form of an omnibus bill.

He assailed attempts "to gain competitive advantages through legislative and regulatory processes" and lashed out against "misuse of public relations" to influence public opinion against competing carriers. To solve the transportation industry's problems, Mr. Prior stated, "some present advantages must be foregone in part or in whole. Some disadvantages must be continued or even assumed."

Parkes Sees 'Golden Age' If Roads Get Equality

If railroads are given the freedom to run their own business in true American fashion, if they are granted the right to compete on equal terms and price their service to reflect their inherent advantages, the industry will enter a "golden age of increased usefulness, of real and continuing



SPIKE-DRIVING CEREMONY—1955: Joseph A. Fisher, president of the Reading, uses a mechanical driver to drive a beryllium-plated spike to mark opening of the road's Blandon low-grade Line September 23. Some 200 guests of the Reading rode a special train over the line which connects the road's East Pennsylvania and Schuylkill & Lehigh branches just outside Reading. The new line enables the road to speed up freight service to 50 mph

speeds over the line, reduce movement of trains through Reading and cut the ruling grade against eastbound trains on the East Pennsylvania branch from 1% to 0.5%. Total cost of the project, including yard improvements, will come to \$3,350,000. It involved construction of 3.4 miles of new road, rebuilding or relocating of two miles of existing road, and realignment of another mile, plus erection of three bridges.

prosperity," Holcombe Parkes, president of the Railway Progress Institute, said.

Speaking before a railway supply group in Chicago on October 7, Mr. Parkes said it is in the suppliers' own interest, as part of a great essential industry, to help get the Weeks' Report enacted into legislation.

"An effort to bring about this enactment is the first and major objective of RPI," Mr. Parkes declared. He said RPI is anxious to help the carriers capitalize on this "greatest opportunity they have ever had."

"This is the first real effort to project American style competition into transportation," he declared. He said the report is an outward indication of a "new attitude toward railroads," and added that it will have "a favorable effect upon the regulatory mind," regardless of its ultimate outcome.

Hoover Group Plan to Cut ICC Power Hit by Arpaia

Hoover Commission proposals to trim the powers of the Interstate Commerce Commission "threaten to turn the regulation of transportation into a hopeless maze of conflict and confusion," IC Commissioner Anthony F. Arpaia told the New England Railroad Club at Boston October 11.

Terming the proposals "an oblique assault in the guise of procedural and administrative reform," Mr. Arpaia warned they could "cripple" the ICC.

Although he did not endorse it, the commissioner had no criticism of the Cabinet Report's "forthright" proposals to amend the Interstate Commerce Act.

As reported in *Railway Age*, April 18, page 10, the Hoover Commission sent to Congress 52 "task force" proposals on federal legal services and procedures. Among other things, these would establish an administrative court with jurisdiction over trade regulation; would deprive the ICC and like agencies of the right to award reparations and issue injunctions; and would set up a hearing examiner organization outside the agencies.

Commissioner Arpaia said the only complaint he knows of against the ICC is its slowness, but he said the proposals would worsen this situation. As to reparations, he went on, courts lack the technical knowledge and experts available to the agencies and, as a result, judges and juries would

Briefly . . .

. . . The Canadian Pacific has awarded its annual scholarships to McGill University to Marlene Olson of Assiniboia and Donald Nimetz of Southey. Miss Olson is the daughter of Anders Olson, a sectionman-relieving foreman, and Mr. Nimetz is the son of M. A. Nimetz, a section foreman. The fathers of both winners are employed on the CPR's Saskatchewan District.

issue conflicting decisions leading to "not merely discrimination, preference and prejudice" but to "chaos in the transportation system." He warned that "correlation between responsibility and authority will be destroyed" if a trade court is set up and declared that divorcing hearing examiners from agencies would lead to "total disintegration of policy."

Figures of the Week

Freight Car Loadings

Loadings of revenue freight in the week ended October 8 totaled 807,035 cars, the Association of American Railroads announced on October 13. This was a decrease of 13,277 cars, or 1.6%, compared with the previous week; an increase of 104,125 cars, or 14.8%, compared with the corresponding week last year; and an increase of 2,969 cars, or 0.4%, compared with the equivalent 1953 week.

Loadings of revenue freight for the week ended October 1 totaled 820,312 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS For the week ended Saturday, October 1			
District	1955	1954	1953
Eastern	128,489	113,794	137,548
Alleghany	159,393	127,501	156,882
Pocahontas	62,714	51,264	56,643
Southern	130,820	126,348	126,093
Northwestern	145,651	113,066	140,996
Central Western	131,866	130,142	130,268
Southwestern	61,179	59,528	64,104
Total Western Districts	338,696	302,736	335,368
Total All Roads	820,312	721,643	812,534
Commodities:			
Grain and grain products	55,667	54,920	55,316
Livestock	12,461	14,009	13,977
Coal	137,744	121,449	135,900
Coke	13,377	8,467	12,915
Forest Products	47,323	45,868	43,010
Ore	87,084	53,621	80,012
Merchandise l.c.l.	66,598	65,266	71,800
Miscellaneous	400,058	358,043	399,604
October 1	820,312	721,643	812,534
September 24	819,025	710,215	819,709
September 17	822,214	711,228	823,883
September 10	706,575	601,525	710,554
September 3	794,192	688,492	799,080

Cumulative total,
39 weeks

28,108,644	25,275,120	29,316,007
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Operations

Keeshin Firm Takes Over Parmelee's Chicago Runs

Station-to-station transfer of passengers and baggage took on a "new look" in Chicago October 1, when Railroad Transfer Service, Inc., took over the shuttle service from the Parmelee Transportation Company.

Chicago railroads have signed a five-year contract with the new transfer company, which is owned by John L. Keeshin, a former truck operator. Parmelee had previously provided the interdepot service for 102 years (*Railway Age*, July 18, page 9).

The October 1 change-over was effected without mishap. The Keeshin firm started service with a fleet of new station wagons which pulled into ramps formerly used by the Parmelee vehicles.

Parmelee, meanwhile, took the position that the rail carriers "disregarded the public interest" in signing the contract with Railroad Transfer Service. The company labeled as "unacceptable" the railroad notice terminating Parmelee's services, and following the switch Parmelee vehicles continued to offer service at the stations. A railroad spokesman said the new service was "working out very well," and that Parmelee had taken no legal action as yet to halt the operation.

A major difference between the new and old transfer service is that an arriving passenger at Chicago can no longer use his transfer coupon to obtain transportation from the station to a hotel or other points. In addition, the Parmelee system of accepting cash fares has been discontinued, and only passengers with coupons are accepted.

The station-to-station shuttle service is available to passengers originating or destined more than 83 miles from Chicago.

Seaboard to the Rescue As Bridge is Knocked Out

When a misguided tanker rammed the Ashley River bridge at Charleston, S.C., October 5, virtually stranding West Ashley suburban residents, the Seaboard responded to the crisis by putting a special commuter train in service the next morning.

The train, consisting of eight cars and a diesel unit, was made up at Savannah and started service with a stop in West Ashley at 7:25 the morning of October 6, less than 24 hours after the bridge was knocked out, using a railroad bridge near the damaged structure.

Making two round trips in the morning and two in the evening, the "Ashley Special," as it was dubbed by its riders, carried a total of 4,000 passengers into the city on its second morning of operation.

With one draw span of the bridge all but demolished, the train was scheduled to operate for two weeks, carrying its passengers free of charge at the outset and for "nominal fares" in the second week.

Charleston Mayor William M. Morrison lauded the Seaboard for "one of the finest gestures I have ever seen" while State Representative C. R. Burbage announced his intention of introducing a bill in the legislature to commend the road. The passengers themselves reportedly rode the train in an excursion-like spirit, some recommending that the service be made permanent.

The Ashley River bridge normally handles 30,000 cars and trucks daily. Its disruption meant a 50-mile detour for motorists coming into Charleston from the direction of West Ashley.

GN Will Eliminate One Division, Modify Four

The Great Northern plans to change boundaries of four western operating divisions, and eliminate one division entirely, according to I. G. Pool, operating vice-president.

Purpose of the consolidation, Mr. Pool said, is to better balance the mileage in each direction. The road expects to complete the change by February 1.

Scheduled for elimination is the present Spokane division, extending from Dean, Wash., to Wenatchee. The territory will be embraced partially by the Kalispell and Cascade divisions.

Meanwhile, a 129-mile eastern segment of the Kalispell division, between Havre, Mont., and Cut Bank, will be cut off and assigned to the Butte division. A 38-mile segment at the east end



STUDENTS AND WORKERS board the "Ashley Special," en route to Charleston, at one of several highway

grade crossings used during the emergency as pick-up points. Note Pullman car at left, in commutation service.

Vapor Heating Corporation
80 East Jackson Boulevard
Chicago 4, Illinois



RAILROAD COMPANY

JULY 15, 1950

Vice President
Vapor Heating Corporation
80 E. Jackson Blvd.
Chicago 4, Illinois

Dear Sir:

Just recently we found it necessary to change some steam coils on one of our passenger units.

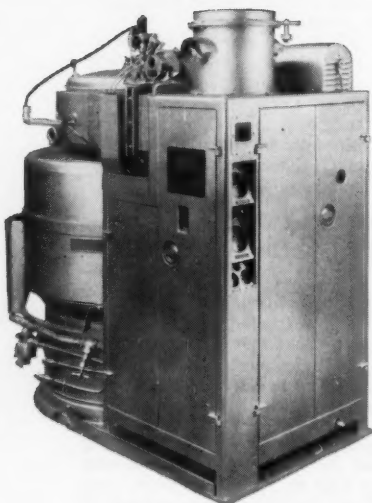
In checking our records we found the outer coils on the generator had been in service since December 16, 1950. The inner and intermediate coils were the original ones that came with the locomotive and had accumulated a total of 1,622,086 miles.

Very truly yours,

Chief Mechanical Officer

Read this unsolicited, written statement-of-fact by a long-time user of Vapor Steam Generators—a chief mechanical officer of one of the nation's major railroads:

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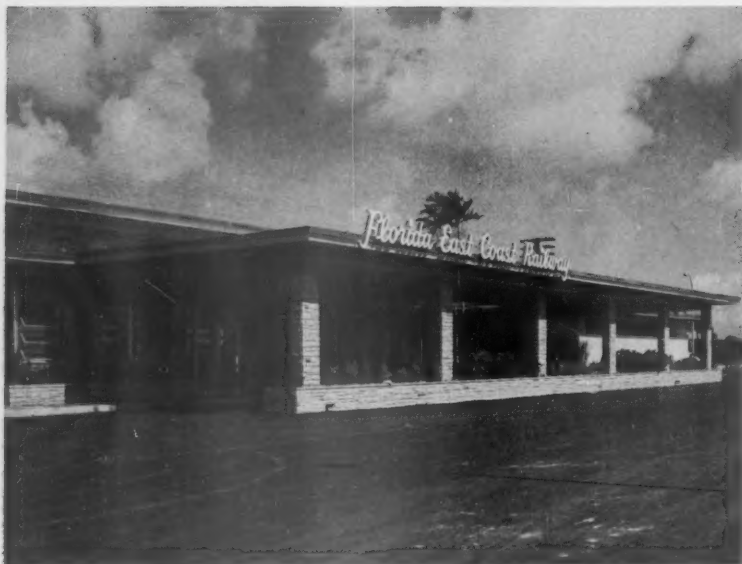
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Vapor Export Corporation • Vapor International Corporation, Ltd. • Room 1400, Railway Exchange Bldg. • Chicago 4, Illinois



Florida East Coast Opens New North Miami Station

The Florida East Coast opened its new \$260,000 station at North Miami, Fla., October 1.

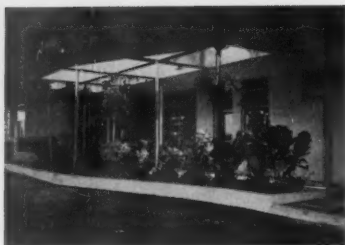
The new station—nine miles north of the FEC's Hollywood station and nine miles north of its main Miami passenger terminal—did not supplant a previous station. It was designed to provide a more convenient arrival and departure point for the popular resort and residential districts that have grown up between those two cities.

Constructed of concrete block and steel, the station is 228 ft long and 36

ft wide. Exterior view (above, left), shows the covered entrance driveway. Portions of the exterior walls and columns are faced with rustic Tennessee stone.

The main waiting room, 45 ft by 34 ft, is floored with clay tile and has plastered walls with walnut-paneled wainscote. Blond-finish oak furniture has coral plastic upholstery. The open ticket counter (right, above), with space for five ticket sellers, also is finished in walnut paneling, with a working surface for the sellers of dark green Formica.

The covered entrance driveway, and the adjacent covered walkways, offer complete protection from the weather.



The entrance also opens into a tropical patio (right, below), where a group of palm trees projects through an aperture in the roof.

Acoustical ceilings, used throughout the building, have recessed channels for the fluorescent lighting. Between the ticket office and the baggage room is an arcade with luggage lockers and telephone booths. A paved area adjacent to the station provides parking space for about 60 automobiles.

The complete project was designed and carried out by the FEC's architect, C. G. Henninger, under the direction and supervision of L. C. Frohman, chief engineer. John B. Orr, Inc., of Miami, was the general contractor.

of the Butte division, Williston, N. D., to Bainville, Mont., will be placed under the Minot division.

Extension of Piggyback Seen Aiding LCL Shippers

Extension of piggyback services by railroads was hailed as a great aid to less-carload shippers October 6 at a meeting in Albany, N. Y., of the Atlantic States Shippers Advisory Board. H. A. Rice, assistant traffic manager, J. C. Penney Company said faster and more frequent freight schedules and improved terminal operations make trailer-on-flat-car service specially attractive to small-lot shippers.

Ralph E. Clark manager of the closed-car section, Car Service Division, Association of American Railroads, told the meeting that present increased efforts by railroads to improve their service should alleviate the freight car shortage. He called attention to orders for 50,802 freight cars as of September 1 as evidence of this attempt to provide improved service, and noted that the

3,995 new cars ordered in August broke a two-year record. He also cited reductions of cars awaiting repairs from 7.1% of the car fleet to 5.5% during the 11 months ended September 1.

New Facilities

SP to Install 114-Mile Traffic Control System

With the planned installation of CTC between Thermal, Cal. and Yuma, Ariz., the Southern Pacific will have CTC or double track between Los Angeles and Yuma. The \$7 million project will include 16 controlled sidings, each 9,000 ft long, spaced approximately $7\frac{1}{2}$ miles apart (Thermal-Yuma).

The existing $6\frac{1}{2}$ miles of double track approaching Yuma will be equipped with CTC so trains may operate in

either direction on either track. At the west end, nine miles of second main track will be constructed from the west end of Indio to the east end of Thermal siding.

The CTC control machine will be at Beaumont, Cal., the location of the dispatchers who now control existing CTC between Los Angeles and Indio. Concurrent with the Thermal-Yuma project, the SP will lengthen existing sidings in CTC territory between Colton, Cal., and Indio.

Elgin, Joliet & Eastern—A new lake front yard will be built in Indiana Harbor, Ind., at a cost of \$312,913.

Lake Superior & Ishpeming—This road has applied to the ICC for authority to construct a new line, extending 16 miles northeasterly out of Cusino, Mich., to serve a timber-producing area.

Missouri Pacific—Plans are being prepared for reconstruction of two bridges: One at Falls City, Neb., estimated cost \$36,000, and a second at Modoc, Ill., estimated cost \$34,540.

Reinforced concrete trestles will replace wooden trestles at Riverside, Tex., and DeQuincy, La., estimated cost \$107,000.

Construction is 90% complete on 3.5 miles of industrial spur and one mile of auxiliary track at Channelview, Tex.

Rock Island—The Federal Telephone & Radio Co., which will install automatic switching and speed control in this road's Silvis, Ill., yard, is a division of the International Telephone & Telegraph Corp., not American Telephone & Telegraph, as reported in last week's *Railway Age*, page 53.

St. Paul Union Depot—A new diesel parts storeroom and a switchmen's locker room have been completed at a cost of about \$27,000.

Organizations

ASME Diamond Jubilee Annual Meeting

A Power Show, technical sessions, and inspection trips will feature the Diamond Jubilee annual meeting of the American Society of Mechanical Engineers to be held this year in Chicago at the Congress, Conrad Hilton and Sheraton-Blackstone Hotels, November 13-18. The Chicago Section of ASME will be host. A dinner and pageant highlighting various ASME milestones from 1880 to the present have been arranged for Tuesday evening, November 15. The annual banquet will be held Thursday evening, November 17.

The Railroad Division program:

TUESDAY, NOVEMBER 15

Congress Hotel—Florentine Room
2 p.m.

Railroad I

Progress in Railroad Mechanical Engineering 1954 and 1955. (Report)

Adhesion—How Much? By F. G. Fisher, assistant mechanical engineer, Reading, and R. K. Allen, Locomotive and Car Equipment Laboratory, General Electric Company. Discussions by R. L. Wilson, vice-president, Brake Shoe and Castings Division, American Brake Shoe Company, and C. E. Tack, product engineering manager, American Steel Foundries.

Service Testing of Freight Cars, by O. A. Maier, director of research and development, Pullman-Standard Car Manufacturing Company.

WEDNESDAY, NOVEMBER 16

Conrad Hilton Hotel—Parlor B
9 a.m.

Railroad II

Symposium on Lightweight, High-Speed Passenger Trains:

History and Development of the ACF Talgo, by J. R. Furrer, manager, Talgo Project, ACF Industries.

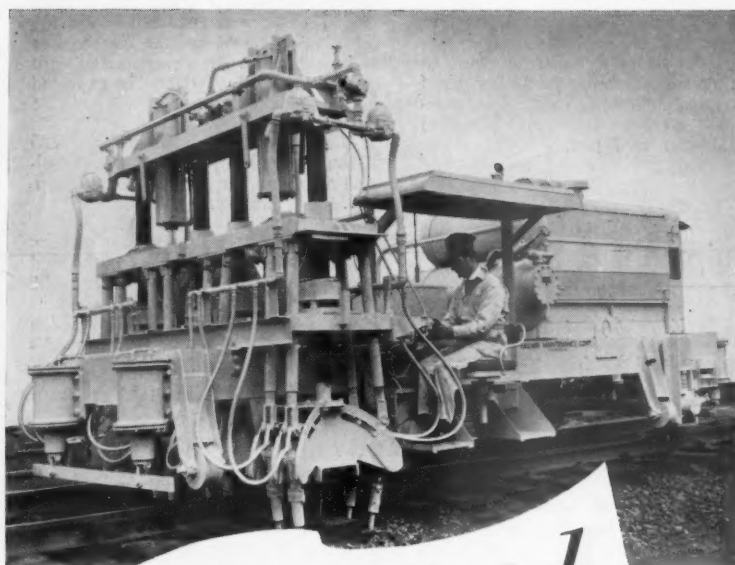
Practical Considerations in New Railway Passenger-Car Designs, by A. G. Dean, assistant chief engineer, Railway Division, Budd Company.

Pullman-Standard's New Lightweight Train—"Train X," by T. C. Gray, vice-president, engineering, Pullman-Standard Car Manufacturing Company.

The General Motors Lightweight Train, by B. B. Brownell, chief engineer, Electro-Motive Division, General Motors Corporation, and W. H. Harvey, co-ordinator of new products, Electro-Motive Division.

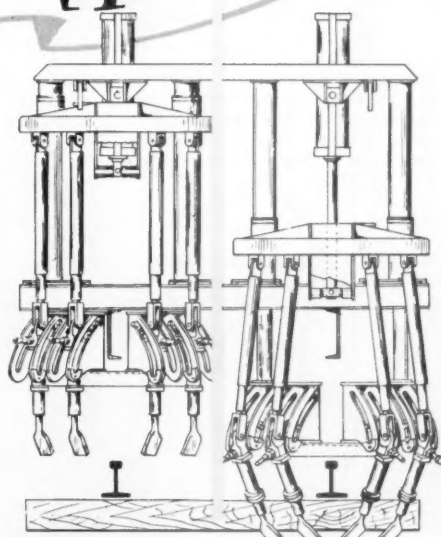
Remarks by C. K. Steins, mechanical engineer, Pennsylvania.

At a meeting of the New York Railroad Club, to be held at the Hotel



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Design



Split head tamper design provides features other types cannot approach. Low joints can be picked up and surfacing can be done where one rail requires more tamping than the other. Split head design is an appropriate supplement to other McWilliams Tamper features: accurate control by the operator . . . tamping under the rail . . . speeds to 720' per hour.

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Commodore, October 20, the M. A. Hanna Company will present a color film showing the building of the Quebec North Shore & Labrador, with an opening address by J. A. Miller, chief mechanical officer, QNS&L. The meeting will start at 8:15 p.m., preceded by a dinner at 7 p.m.

Equipment & Supplies

FREIGHT CARS

The **Elgin, Joliet & Eastern** has ordered 25 steel cabooses from the International Railway Car Company at a cost of \$15,750 each. Deliveries are scheduled to begin next February 1 and be completed by May 1.

The **Norfolk & Western** has ordered 1,000 70-ton hopper cars, of which 500 will be built by Bethlehem Steel and 500 by Greenville Steel Car. Delivery is expected early in 1956.

The **Norfolk Southern** has arranged to lease from the Hyman-Michaels Company 100 50-ton gondola cars to be constructed by the Magor Car Corporation. The cars are to be delivered next February, when Magor also has promised delivery of the 50 gondola cars and 50 pulpwood cars ordered previously by the NS (*Railway Age*, August 29, page 41). The 100 cars to be leased will cost Hyman-Michaels \$600,000.

The **Northern Pacific** has ordered 100 50-ft 70-ton mechanically equipped refrigerator cars from the Pacific Car & Foundry Co. at an estimated unit cost of \$22,518. Delivery is expected to start this year.

The **Rock Island** has ordered 225 70-ton covered hopper cars from Pullman-Standard for delivery next January and February.

The **Wisconsin Central**, subsidiary of the **Soo Line**, has been authorized to acquire 15 covered hopper cars, 25 damage-free box cars and 25 regular box cars at a cost of \$606,000. The box cars will be built at the road's North Fond du Lac, Wis., shops next year.

PASSENGER CARS

The **Chicago & Eastern Illinois** has ordered one rail diesel car (RDC-1) from the Budd Company. Delivery is scheduled around November 1. The car will operate between Chicago and Evansville, Ind.

LOCOMOTIVES

The **Erie** will order 10 diesel-electric locomotives at an estimated cost of \$1,638,000. The equipment will include six 1,600-hp general purpose switchers and four 1,200-hp yard switchers.

The **Iraqi State Railways** have requested bids for supply of two diesel-

hydraulic and two diesel-electric locomotives, according to *Foreign Commerce Weekly*. A copy of the specifications may be borrowed from the Commercial Intelligence Division, Bureau of Foreign Commerce, Washington 25, D.C.

Labor & Wages

Western Carriers Grant Wage Hike to Switchmen

The Switchmen's Union of North America and 14 western carriers and terminal companies agreed last week to a package settlement calling for a 10½-cents-an-hour general wage boost, effective October 1.

Four cents of the 10½ cents is in lieu of a railroad-financed health and welfare plan. The agreement provides that the four cents will be credited to the carriers if a railroad-financed health and welfare plan should ever be negotiated by the union.

December 1, when SUNA members go on a five-day week, additional wage increases will occur as follows: \$1.30 a day for yard foremen; \$1.13 a day for yard helpers; and 82 cents a day for switchtenders.

As was the case with last week's settlement with the Brotherhood of Railroad Trainmen (*Railway Age*, October 10, page 13), this settlement with SUNA paralleled the recommendations a Presidential Emergency Board made recently in the still-pending case of the Brotherhood of Locomotive Firemen & Engineers (*Railway Age*, August 8, page 14).

Supply Trade

Don C. Smith, assistant sales manager in charge of commercial sales, Wood Preserving Division, **Koppers Company**, has been named manager of the sales department of that division. He has taken over the sales duties of **Douglas Grymes, Jr.**, recently named a vice-president and executive assistant to general manager.

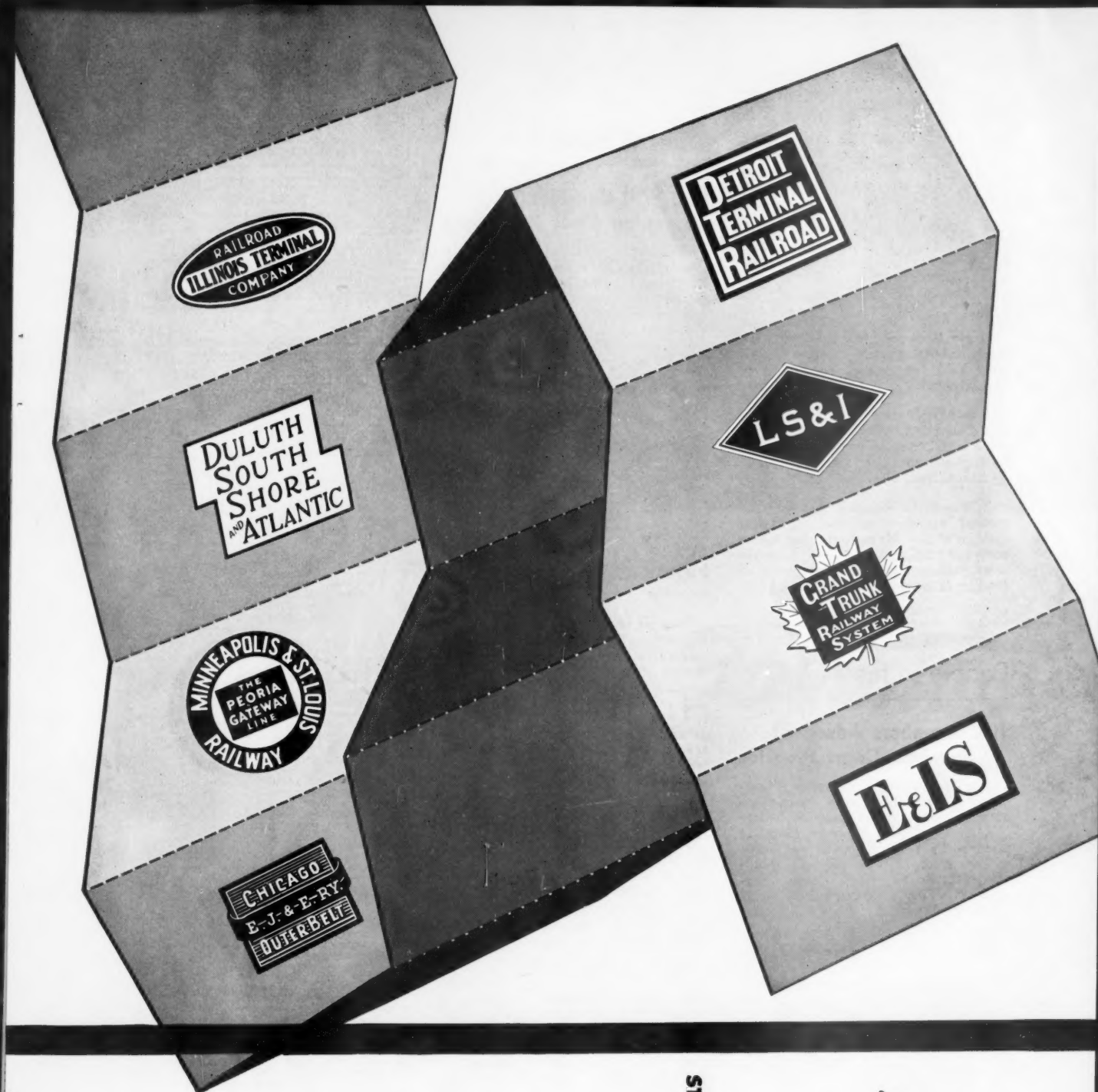
Mandel Brothers, Inc., has appointed **Leo F. Duffy** as railroad representative of its hotel and contract division.

A British firm, **Taylor Brothers & Co.**, will provide technical aid to **Armco Steel Corporation** in the rebuilding of its railroad car wheel works at Butler, Pa. This will include technical consultation on layout, equipment design and production know-how. **Kendall Engineering Company** of Alliance, Ohio, which designed much of the equipment used in the Taylor Brothers plant at Manchester, Eng-



NEW AUTOMATION EQUIPMENT used in railroad classification systems is inspected by officers of the Union Switch & Signal Division of Westinghouse Air Brake Company. Left to right are D. P. Fitzsimmons, assistant manager, research and development; G. W. Baughman, recently appointed

to the staff of the vice-president and general manager; Dr. F. E. Lowance, director of research and engineering; E. F. Brinker, manager, research and development; and H. L. Ludwig, assistant manager, railway signal engineering (*Railway Age*, October 10, page 54).



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—And with the expanded use of low cost fuels, good lubrication is now more important than ever.

STANDARD OIL COMPANY (Indiana)



LUBRICATING OILS

THESE ARE JUST 8 OF 140 RAILROADS SERVED BY STANDARD OIL COMPANY

land, also will provide Armco with engineering consultation. The new plant is already under construction and will go into operation early in 1956.

T. C. Coleman & Son of Louisville, Ky. has been appointed sales representative of **Brandon Equipment Company** for all railroads headquartered in Louisville and Nashville, Tenn.

Blair Blowers, Jr., has joined the **Railroad Materials Corporation**, New York, as district representative in Cleveland.

Central States Industrial Supply Company, Cleveland, has been made distributor in northeastern Ohio for high pressure hose assemblies made by **Stratoflex, Inc.**

William C. Russell has become general manager of the St. Louis division of **Joy Manufacturing Company**, Pittsburgh. He was formerly sales manager and chief engineer of **Dodge & Seymour Ltd.**, New York.

People in the News

ICC Members Admitted To Supreme Court Practice

Five members of the Interstate Commerce Commission were among attorneys admitted to practice before the United States Supreme Court at the court's recent opening session.

The commissioners were: J. Haden Alldredge, Anthony F. Arpaia, Kenneth H. Tuggle, Owen Clarke, and John H. Winchell.



ROBERT GINNANE, who has been named general counsel to the Interstate Commerce Commission after eight years with the Office of the Solicitor General in the Department of Justice (*Railway Age*, October 10, page 13).

Rates & Fares

ICC Will Consider Reopening Class Rate Case

The Interstate Commerce Commission will receive replies, on or before November 1, to petitions filed by western and southwestern railroads for reopening the 28300 class-rate case.

This was stipulated in a commission order which also formally accepted the petitions and filed them as part of the case's record. The petitions were based on the petitioning roads' concern about revenue losses they would suffer if they are required to provide for alternation of their commodity and exception rates with their class rates (*Railway Age*, July 18, page 9).

Financial

Boston & Maine.—Adding Two Directors.—This road will ask stockholders to increase the number of directors from 19 to 21 at a special meeting October 20. Stockholders also will be asked to approve a proposal to issue up to \$27,500,000 of income debenture bonds to be exchanged, on a voluntary basis, for the road's 275,000 shares of outstanding preferred stock (*Railway Age*, June 6, page 14). The two new directorships would be filled by Oliver D. Appleton, of the New York Stock Exchange firm of Cyrus J. Lawrence & Sons, and Patrick B. McGinnis, president of the New Haven, whose application to serve simultaneously as president of the B&M is pending before the ICC. Mr. Appleton would become chairman of the B&M.

Great Northern.—Sale to Greyhound.—GN stock holdings in Northland Greyhound Lines, amounting to 66,694 shares or 44.3% of those outstanding, will be sold to Greyhound Corporation November 2. The contract calls for payment of \$22 a share for the shares held by GN. Greyhound is offering to buy, at the same price, the few Northland shares that are publicly held. Purpose of the move is eventual merger of Northland into the parent corporation.

Union Pacific.—Sells C&NW Securities.—The UP recently announced sale "in the open market" of all its remaining Chicago & North Western securities, which consisted of 12,838 preferred shares and \$2,152,500 of second mortgage 4½% convertible income bonds. Proceeds from the sale were not revealed.

Western Maryland.—Arrearages Elimination Plan.—Stockholders of this road approved at a special meeting

October 10 three steps in a plan to pay off the \$19,250,070 of dividend arrearages on its first preferred stock (*Railway Age*, August 8, page 59). The stockholders approved issuance of 128,597 shares of new common stock; change of the par value of the common from \$100 per share to "no par", and issuance and sale by the directors of not more than \$5,000,000 of new first mortgage bonds. The new common, if the issue is approved by the ICC, will equal one share for each six of the presently outstanding 177,420 shares of first preferred.

Securities

Applications

CHICAGO, ROCK ISLAND & PACIFIC.—To assume liability for \$2,952,000 of series P equipment trust certificates to finance in part acquisition of equipment (listed below) which is expected to cost \$3,936,625.

Description and Builder	Estimated Unit Cost
4 3-unit Talgo type passenger-train cars (ACF Industries, Inc.)	\$150,000
1 1,200-hp diesel-electric passenger unit (Electro-Motive Division, General Motors Corporation)	175,000
225 70-ton covered hopper cars (Pullman-Standard Car Manufacturing Company)	7,785
200 steel-sheathed, 50-ton box cars (ACF)	7,050

The certificates, dated December 1, would be sold by competitive bids which would fix the interest rate. They would mature in 24 semi-annual installments of \$123,000 each, beginning June 1, 1956.

SEABOARD AIR LINE.—To assume liability for \$6,555,000 of equipment trust certificates, first installment of a \$13,110,000 issue, to finance in part purchase of equipment having a total estimated cost of \$17,497,106. The equipment to be purchased under the entire issue includes:

Equipment and Builder	Estimated Unit Cost
1,000 50-foot box cars (Pullman-Standard Car Manufacturing Company)	\$7,880
200 70-ton covered hopper cement cars (ACF Industries, Inc.)	7,481
200 hopper phosphate cars (Bethlehem Steel Corporation)	8,613
10 1,750-hp diesel-electric switchers (Electro-Motive Division, General Motors Corporation)	161,544
3 lightweight sleeper-lounge-bar cars (Pullman-Standard)	227,539
6 bedroom cars (Pullman-Standard)	190,712
3 bedroom-compartment-drawing room cars (Pullman-Standard)	205,934
6 roomette-compartment-bedroom-open section cars (Pullman-Standard)	214,919
7 52-passenger coach-lounge cars (Pullman-Standard)	141,758

The certificates, dated November 1, would mature in 15 equal annual installments beginning November 1, 1956. They would be sold by competitive bidding which would fix the interest rates.

Security Price Averages

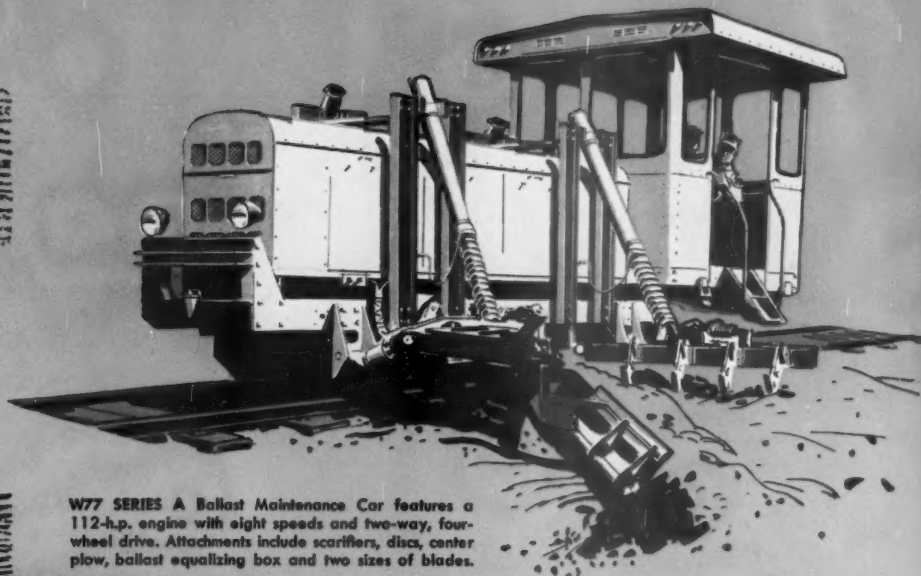
	Oct. 10	Prev. Week	Last Year
Average price of 20 representative railway stocks	88.55	92.88	70.10
Average price of 20 representative railway bonds	97.75	98.09	95.92

Dividends Declared

NORTHERN (N.H.).—\$1.50, quarterly, payable October 31 to holders of record October 13.

RICHMOND, FREDERICKSBURG & POTOMAC.—dividend obligations, \$1; voting common, \$1; 6% guaranteed (extra), \$1; 7% guaranteed (extra), 75¢; all payable October 5 to holders of record September 23.

WESTERN PACIFIC.—75¢, quarterly, payable November 15 to holders of record November 1.



W77 SERIES A Ballast Maintenance Car features a 112-h.p. engine with eight speeds and two-way, four-wheel drive. Attachments include scarifiers, discs, center plow, ballast equalizing box and two sizes of blades.

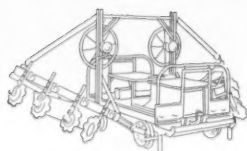
When you think of

BALLAST MAINTENANCE

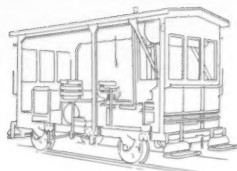
... think of

Fairmont

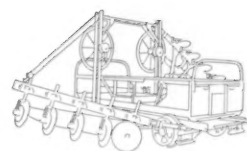
Fairmont's reputation in the field of railway maintenance is the product of several factors. It grows, first of all, from the unquestioned quality of all Fairmont units. Then, too, it comes from Fairmont's traditionally fine design and engineering. But perhaps even more importantly, it results from Fairmont's ability to provide *exactly* the right piece of equipment for every job. As evidence of this point, we offer the four Fairmont products pictured here. The giant W77 Series A, for instance, is ideal for large jobs where speed and efficiency are required. The M25 Series D combines low cost with unusual thoroughness of work. The M23 Series E does an excellent job for limited operations. And the W62 Series C is among the most economical units of its kind. If you are interested in further information on any of these products, we will be most happy to accommodate you. You will discover, we feel certain, that when you think of ballast maintenance—you should think *first* of Fairmont!



M25 SERIES D Ballast Discer features a heavy-duty truck type transmission and four-speed, two-way operation. Discing equipment can be detached, thus freeing the unit for gang service.



M23 SERIES E Ballast Drainage Power Unit features a 75-h.p., 6-cylinder engine with four-speed, two-way operation. Unusually thorough, economical and dependable. Minimum crew required.



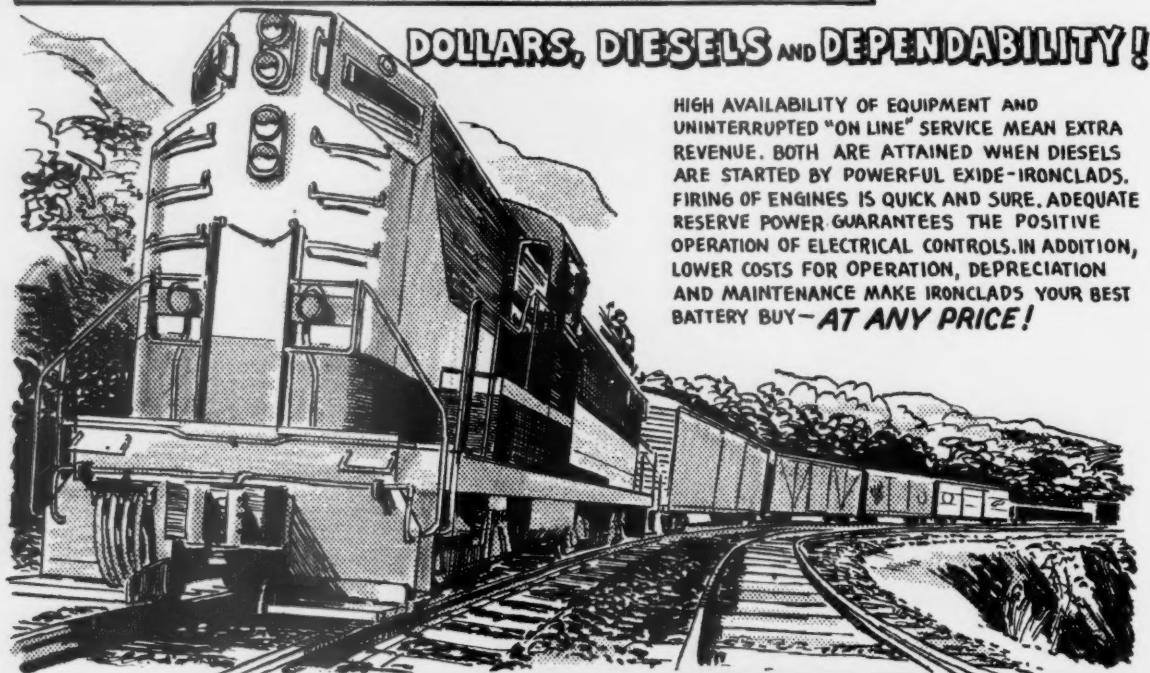
W62 SERIES C Ballast Discer is a self-propelled unit that improves track drainage, reshapes shoulders and aids in reballasting and tie renewal programs. Five 18" discs, full-depth operation.

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MANUFACTURERS OF INSPECTION, SECTION AND GANG CARS, HY-RAIL CARS, MOTOR CAR ENGINES, PUSH CARS AND TRAILERS, WHEELS, AXLES AND BEARINGS, BALLAST MAINTENANCE CARS, DERRICK CARS, OIL SPRAY CARS, GROUTING OUTFITS, TIE RENEWAL EQUIPMENT, RAIL RENEWAL EQUIPMENT, WEED CONTROL EQUIPMENT.

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HIGH AVAILABILITY OF EQUIPMENT AND UNINTERRUPTED "ON LINE" SERVICE MEAN EXTRA REVENUE. BOTH ARE ATTAINED WHEN DIESELS ARE STARTED BY POWERFUL EXIDE-IRONCLADS. FIRING OF ENGINES IS QUICK AND SURE. ADEQUATE RESERVE POWER GUARANTEES THE POSITIVE OPERATION OF ELECTRICAL CONTROLS. IN ADDITION, LOWER COSTS FOR OPERATION, DEPRECIATION AND MAINTENANCE MAKE IRONCLADS YOUR BEST BATTERY BUY—**AT ANY PRICE!**

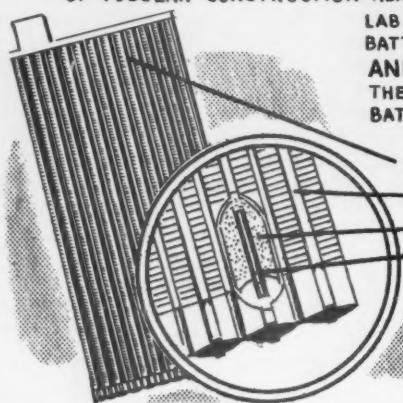
BATTERIES ARE **WORKED** TO DEATH BY EXIDE ENGINEERS TO LEARN **SECRETS OF LONGER LIFE**

SINCE 1910, RESEARCHERS HAVE GREATLY IMPROVED EXIDE-IRONCLAD PERFORMANCE AND USEFUL WORKING LIFE, BUT THE BASIC IRONCLAD PRINCIPLE OF TUBULAR CONSTRUCTION REMAINS THE SAME.



LAB TESTS OF IRONCLADS AGAINST CONVENTIONAL TYPES OF BATTERIES SHOW THAT THEY GIVE BETTER PERFORMANCE... AND FROM 20% TO 30% LONGER LIFE!

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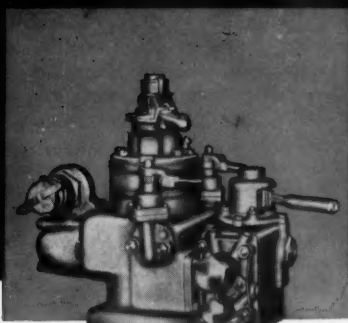
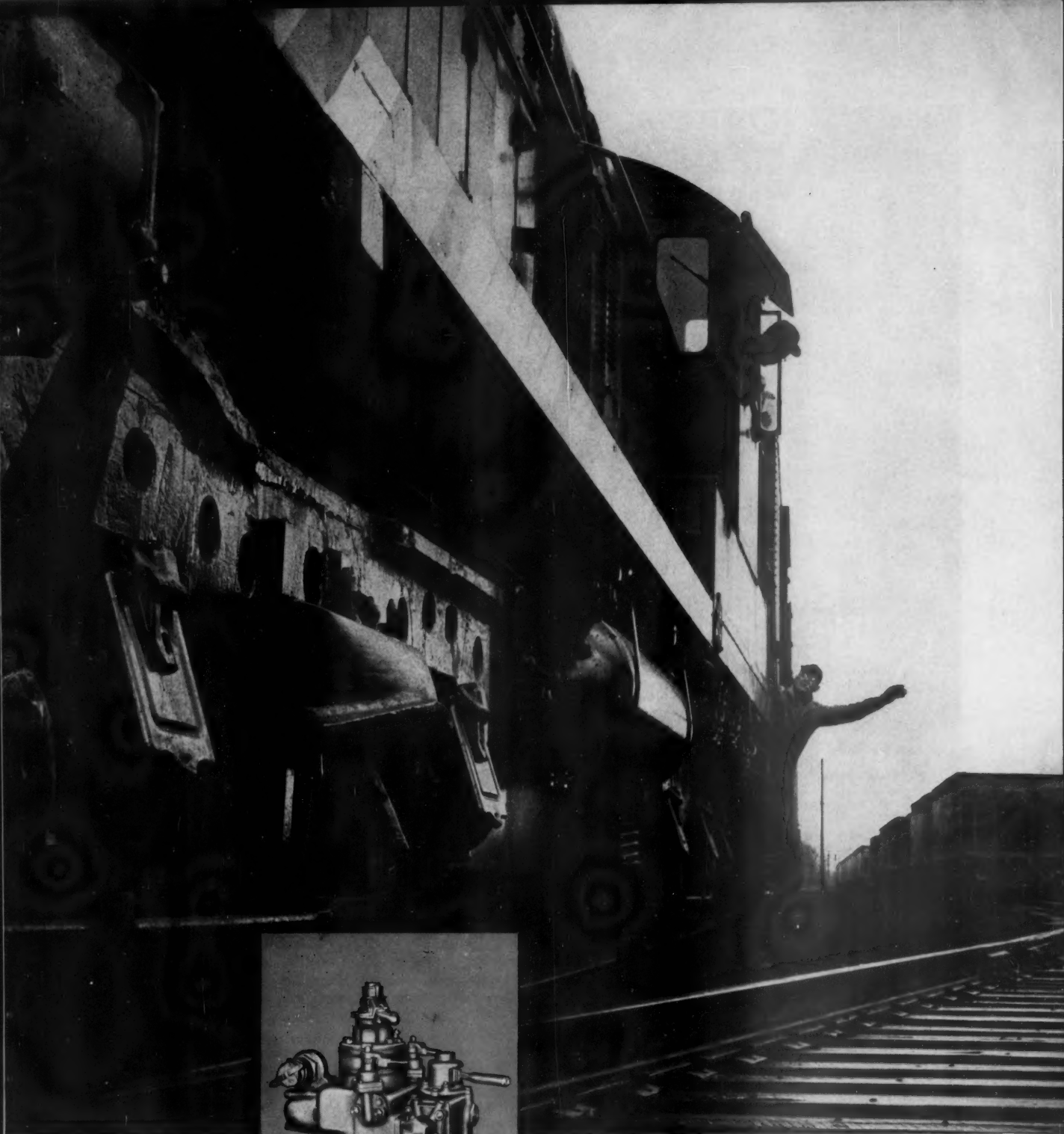


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ARE YOUR BEST POWER BUY
AT ANY PRICE!

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Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.



Set them off easy with the Westinghouse 6-SL Brake

The 6-SL Brake handles easily and responds quickly. With it, you can speed up your switching operations and still protect the lading.

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LOW CONDUCTIVITY . . . Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity —.25 btu per square foot, per hour, per degree F., per inch thick.

LIGHT WEIGHT . . . Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT . . . Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL . . . Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE . . . STREAMLITE HAIRINSUL is available $\frac{1}{2}$ " to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings available.

HIGH SALVAGE VALUE . . . The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

OUTLASTS THE LIFE OF THE CAR

That bright new refrigerator car coming out of the shop will someday wear out, be sold for scrap or be junked, but the STREAMLITE HAIRINSUL originally used in the car can be salvaged to be used again. It actually outlasts the life of the car!

STREAMLITE HAIRINSUL's high insulating efficiency remains the same year in and year out. Records show where all-hair insulation removed from refrigerator cars after 20 years or more of service, is in like new condition. All-hair insulation does not deteriorate with age. Its salvage value is high.

At left are additional reasons why STREAMLITE HAIRINSUL is the leading car insulation. Write for complete data.

MERCHANDISE MART, CHICAGO 54



SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED

Just try to damage it!



**Adlake No. 31
Electric Lantern**

Here's the sturdiest, most dependable electric lantern ever! Just look at these *plus* features: A sturdy, one-piece bottom guard protects bulbs from damage . . . an always-bright signal is assured by the large, highly-polished reflector . . . and the positive switch permits a quick change from long-range train signal to the bright spot for car number reading.

What's more, a corrugated-rubber-covered bail provides a sure safe, grip at all times . . . and finally, spare bulbs are carried under the lantern cover.

The ADLAKE No. 31 lantern is the result of almost a century of manufacturing for the railroads of America. This experience, plus the assured satisfaction that has always gone with the ADLAKE name, is your best guarantee of lasting dependability.

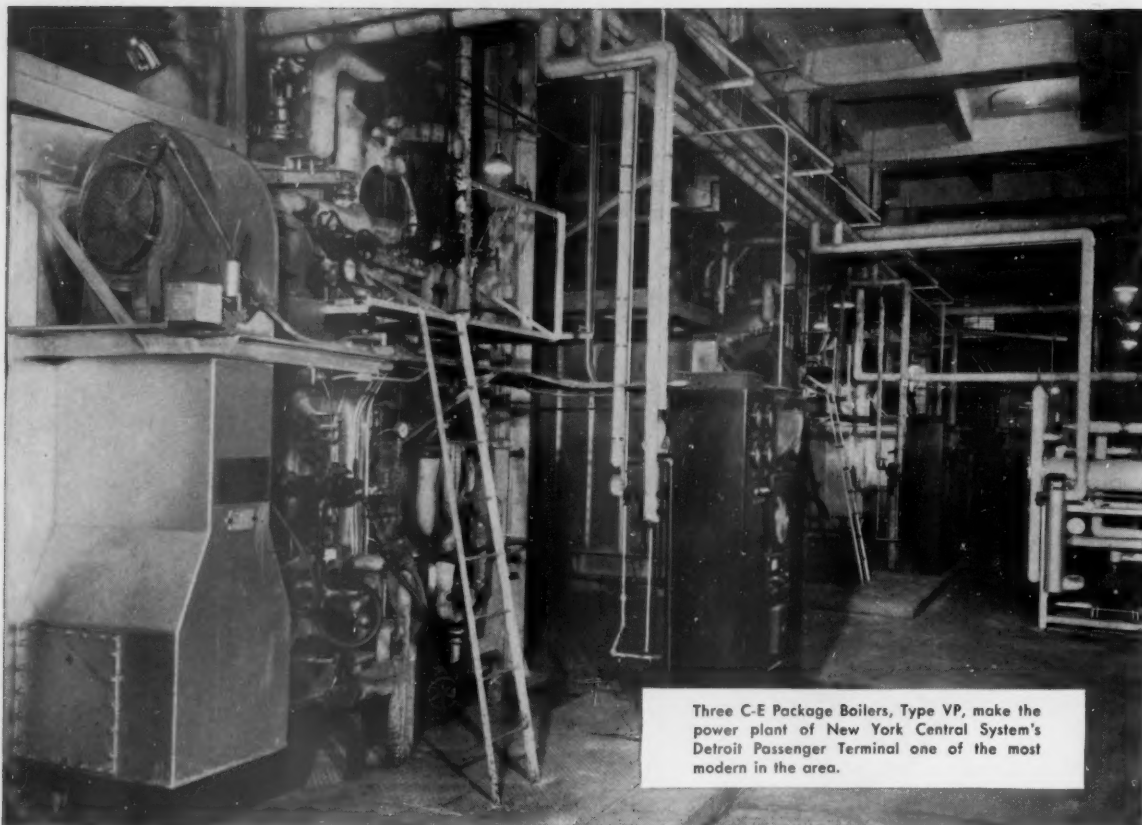
For complete information, send a card requesting Bulletin B-105A to The Adams & Westlake Company, 1150 N. Michigan, Elkhart, Indiana. No obligation, of course.



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Manufacturers of ADLAKE Specialties and Equipment for the Railway Industry



Three C-E Package Boilers, Type VP, make the power plant of New York Central System's Detroit Passenger Terminal one of the most modern in the area.

Three C-E Package Boilers, Type VP

modernize Michigan Central power plant...

When steam demands became too heavy for the Detroit Passenger Terminal's five old-style boilers, they were replaced with three new Combustion Engineering Package Boilers, Type VP. The efficient new C-E installation provides adequate amounts of steam for 150 passenger cars, as well as for heating adjacent buildings.

Each of the three new VP Boilers has a capacity of 28,000 pounds of steam per hour, at 175 psig operating pressure. Oil firing the boilers results in a substantial saving over the cost of coal for the old boilers.

Probably your steam needs, too, can be economically handled by a C-E Package Boiler. But if you need even

greater capacity, or fire solid fuel, C-E has the answer. The C-E Vertical Unit Boiler, Type VU-10, for example, is available in nine sizes from 10,000 to 60,000 pounds of steam per hour...for operating pressures to 475 psi. In fact, there is a standardized C-E boiler for any capacity from 5,000 to 350,000 pounds per hour...for any type of fuel. Our engineers will be glad to discuss your specific needs at any time.

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COMBUSTION ENGINEERING

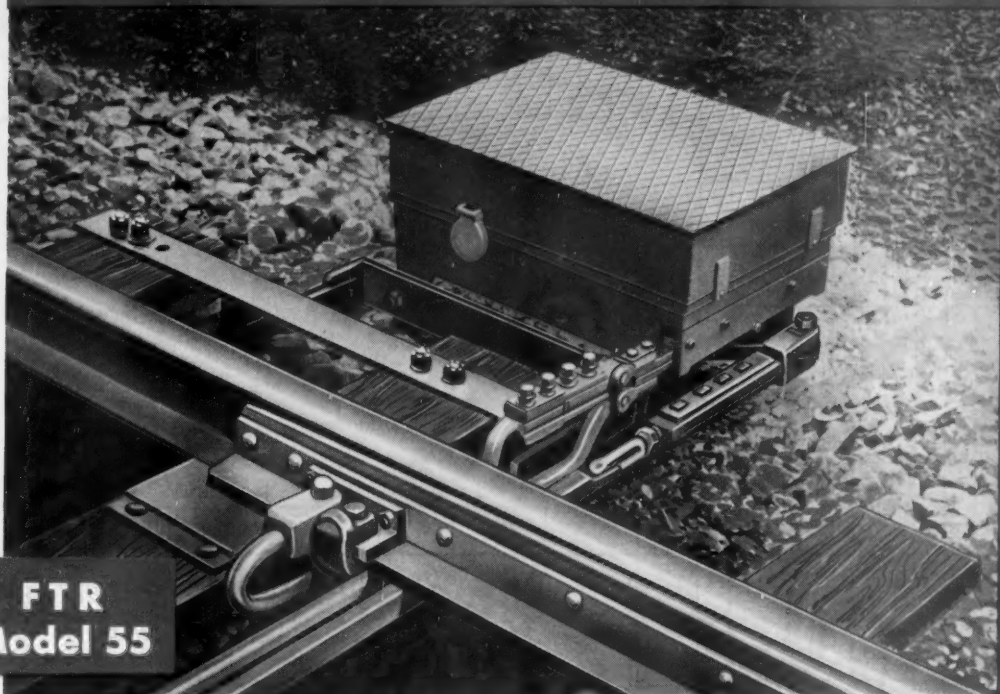
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A new SWITCH MACHINE...



**FTR
Model 55**

**with unique design and operational features ...
for yards and terminals ... at LOW initial cost!**

**FTR Model 55 Switch Machine
provides these advantages not previously
available to the railroad industry:**

- Switch is trailable.
- Points mechanically locked to stock rail, thus avoiding effects of rail creepage.
- Installed either right-hand or left-hand ... without modification. Special ties are not required.
- Light in weight (only 264 pounds).
- Small size permits placing lengthwise to the switch ... in areas of minimum clearance.
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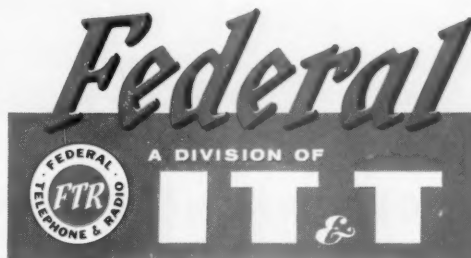
FTR Model 55 Switch Machine meets the needs of the railroad industry for *lighter* equipment ... compact and rugged ... more efficient and dependable ... *and low in initial cost.*

Design features and performance advantages heretofore unavailable to American railroads are now provided by this new, long-life unit.

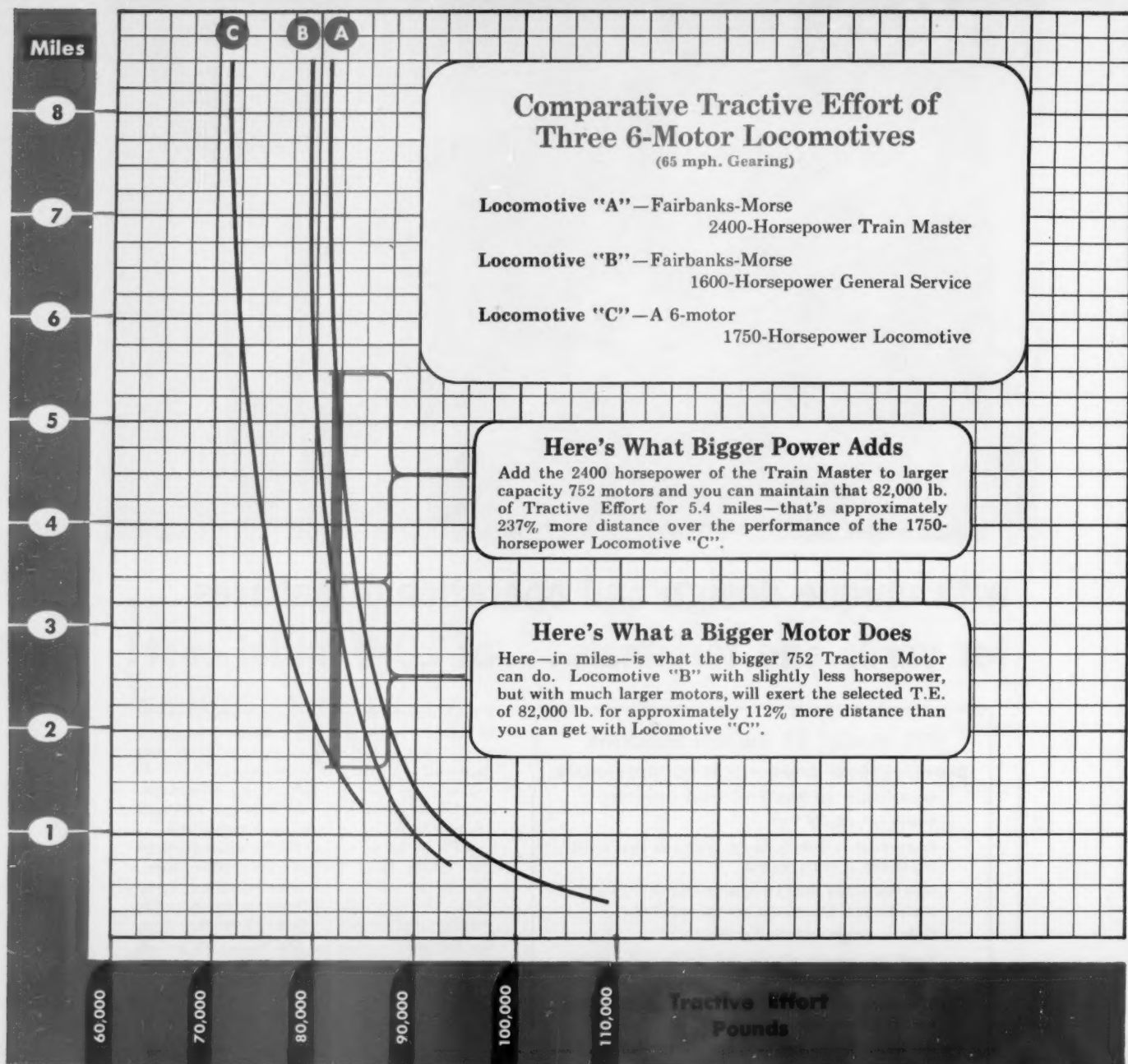
FTR Model 55 Switch Machine is a development of the IT&T System's world-wide experience in engineering and manufacturing communications and signaling systems and equipment to meet the standards of modern railroad operation.

For full information on FTR Model 55 Switch Machine, write to Federal's Railroad Division, Dept. P-447.

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Which would you choose to



BIGGER TRACTION MOTOR CAPACITY

BIGGER HORSEPOWER

MAKE TRAIN MASTER YOUR SOUNDEST MOTIVE POWER BUY

do with your Train Masters?

1 Haul More Tonnage?

According to the chart, if you were using Locomotive "C" on a 5-mile ruling grade, its 1750-horsepower and smaller traction motor capacity would rate a Tractive Effort of about 73,300 lb.

Put your Train Master on that same hill. Locomotive "C" would need help over the grade to meet tonnage ratings set by the Train Master, for the TM's larger horsepower and greater

traction motor capacity would rate a T.E. of 82,600 lb. for the distance.

Use your Train Master power this way and you will haul up to 15% more tonnage than with Locomotive "C", at rated traction motor temperatures.

This superiority of the Train Master is analogous to the superiority of diesel-electrics generally over the steam locomotive.

2 Haul Same Tonnage—Faster?

On that same 5-mile hill, you might elect to keep the tonnage ratings set by Locomotive "C". Your 2400-horsepower Train Master would haul the same tonnage over the grade—faster.

The longer the hill, the greater the performance differential in favor of the Train Master.

If this option of operation were your choice, you would be running the bigger capacity 752 motors of the Train Master at much lower temperatures than on Locomotive "C". These lower operating temperatures will result in longer motor life, typical of habits of electrical insulation.

Either Way

... Train Master's greater traction motor capacity and greater horsepower give you greater motive power performance than any other 6-motor locomotive. Fairbanks, Morse & Co., 600 South Michigan Avenue., Chicago 5, Ill.



FAIRBANKS-MORSE

a name worth remembering when you want the best

DIESEL LOCOMOTIVES AND ENGINES • RAIL CARS AND RAILROAD EQUIPMENT •

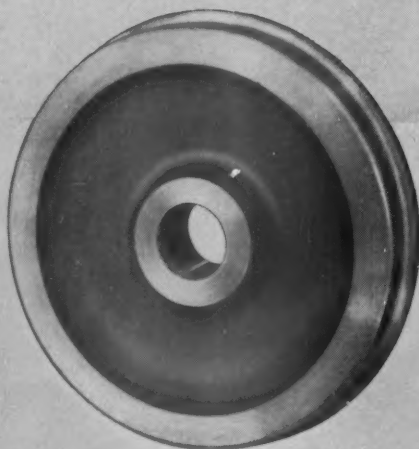
ELECTRICAL MACHINERY • PUMPS • SCALES • WATER SERVICE EQUIPMENT • MAGNETOS

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Edgewater

Rolled Steel Wheels

Edgewater
Steel Company
PITTSBURGH, PA.

makers of

Draft
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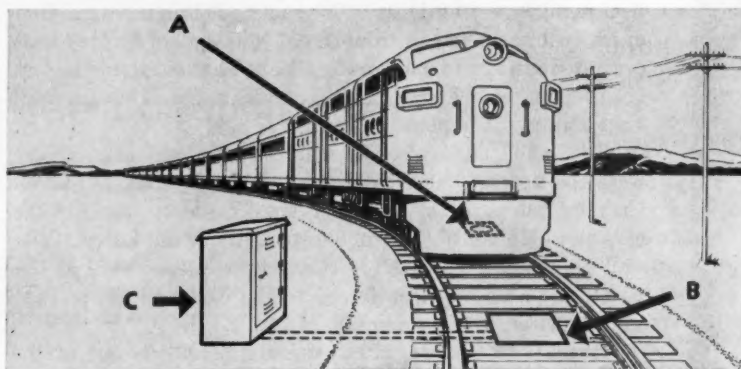
Rolled
Steel
Tires



Rolled
Steel
Wheels



What's New in Products



IN THE Identra train identification system, "A" is the train-carried identification unit (inert coil); "B" is the wayside train identification unit; and "C" is the electronic equipment and relays in wayside case.

"Identra" System

An important step in railroad automation is a method of train identification, the "Identra" system, by which trains are provided with individual "character," allowing them to register their identity as well as their location.

This system was primarily developed for service where trains operate on close headway, as in rapid transit or commuting service. It can be used

with virtually any type of powered interlocking to provide automatic route line-up. When using in conjunction with illuminated signs or an automatic announcing system, it provides a means for identifying approaching trains to operators at control points and to the public at station platforms.

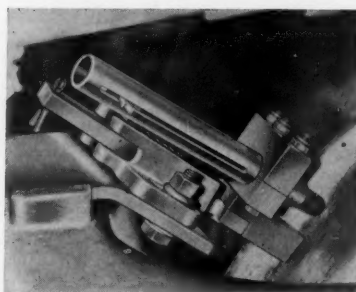
The "Identra" system operates on the inductive principle. No source of energy or electrical connection is required on the train. Train carried

equipment consists simply of an inert tuned coil so mounted on the car or locomotive that it inductively couples with wayside coils when passing wayside locations. Means for quickly changing identity of this tuned coil can be provided.

Wayside equipment includes coils at each location where trains are to be identified, mounted so as to inductively couple with the train coil as the train passes the wayside location.

These wayside coils are connected by cable with electronic equipment housed in an instrument case at the wayside location. Consisting of a power supply unit, amplifier unit and a frequency-selective network unit for each identification frequency, this electronic equipment is plug connected and contained in a shock mounted rack. Each frequency-selective network includes a reliable high speed relay which is used to initiate the desired function.

When the inert train carried coil comes into the inductive field of a set of wayside coils, an amplifier oscillates at a frequency determined by the tuning of the train carried coil. This oscillation frequency is "identified" by an appropriate frequency-selective network, and a corresponding relay is energized. The system operates at any train speed in all kinds of weather. *Union Switch & Signal Division, Westinghouse Air Brake Company, Swissvale, Pa. •*



Flange Lubricator

This flange lubricator uses dry molybdenum-disulfide stick-type lubricant and has a guide shoe which keeps it aligned with the wheel. The lubricator has four parts—the housing, slide bar, stick tube, and guide shoe. There are no springs or regulating mechanism requiring adjustment. The molybdenum-disulfide is claimed to provide high-film-strength lubrication which does not pick up dirt or other abrasives. It is also said that there is no track fouling or traction losses. *National Aluminat Corporation, 6216 West 66th place, Chicago 38 •*



Air-Powered Strapping Machine

A semi-automatic tool, said by the manufacturer to be the first air-powered strapping machine that automatically tensions strapping and then seals and cuts it off in two easy motions, has just been made available.

The tool is said to provide uniform, predetermined tension, which may be adjusted up to 1,600 lb. Its aluminum alloy base makes it only a few pounds heavier than a hand-operated seal feed tool. *Signode Steel Strapping Company, 2600 North Western ave., Chicago 47 •*



"Nitric Acid leaking— we need help fast."

A General American District Manager got this message. One of his customers was in trouble. A 50,000-gallon tank of concentrated nitric acid had sprung a leak. The acid would be lost . . . property would be damaged . . . lives might be endangered. Fast action was imperative!

Nitric acid? That called for stainless steel tank cars. Where were the nearest ones? Find them . . . explain the situation. Call the railroad. Have a special train made up. Pick up the cars and highball to the trouble spot. Above all, hurry.

Within hours, the GATX stainless steel cars were at the plant, the acid was transferred to the cars and the storage tank repaired with a minimum of loss.

Unusual? Of course . . . but unusual service is one of the many benefits offered to lessees of GATX tank cars. There are over 48,000 cars in the GATX fleet . . . over 200 different types . . . available for your use without capital investment. To keep this fleet rolling, General American maintains a nation-wide network of district offices and shops that provide service on a 24-hour basis. That's why, when it comes to dependability, *it pays to plan with General American.*



GENERAL AMERICAN TRANSPORTATION CORPORATION

135 South La Salle Street • Chicago 90, Illinois



Needed: Modern Transportation Textbooks

Of an even dozen standard college textbooks on transportation in *Railway Age's* library, written during the past 15 years, not many could be appraised as fully up-to-date and realistic. Although all of them are carefully written, adequately documented, and sound in their reasoning, most of them are "dated." Transportation conditions have changed faster than transportation literature.

Most of the books follow a pattern of subject treatment which seems to have become more or less standard during the Twenties. Subject headings are almost identical, and appear in the same order. In general, the bulk of the text material is devoted to orthodox monopoly-type regulation of railroads—with whole chapters on subjects like "discrimination" and "the long-and-short haul clause," devoted wholly to railroads. Other forms of transportation are given much briefer treatment, usually at the end of the books. Private transportation gets almost no attention, and contract carriage but little more. Brief mention or none at all is made of the effect of the growth of these big movers of freight and passengers on the common carriers—who are prevented by law and regulatory tradition from "fighting back" against these newcomers.

After studying most of these texts, the college student could easily reach a wholly false impression of who actually moves what and under what circumstances. He could be easily led to think of the railroads as an overwhelmingly large influence in transportation, with persisting monopoly power. Most of his reading time would be taken up with following the intricacies of regulatory goals and concepts which should be labeled "history."

Textbooks, of course—except in history—have the primary duty of teaching students what now exists. Their authors are not expected to be prophets or policymakers. But, surely, in the year 1955, there is a need for books which will no longer devote a major portion of their pages to lengthy explanations of a monopoly-type of regulation. Such overemphasis gives the student misconceptions about the roles of the various forms of transportation. It harms the common carriers because it leaves an impression of both their status and their powers which have vanished. It is

contrary to the interests of the forms of transportation other than rail because these newcomers get too little attention.

The university faculty specialists who have for the most part authored the standard texts on transportation are able and fair-minded men. Every one of the 12 textbooks in question, for example, deals straightforwardly with the question of government aids, with findings based upon principles accepted (in theory at least) by the business community generally. In them railroaders will find ample support for their own protestations about government aids. Every one of the 12 texts does a magnificent job in impressing on college students the supreme importance of good transportation to every business. Each gives a realistic picture about the relation of transportation charges to other prices and the earnings status of transportation companies related to other businesses.

Their chief defect is, as noted, that they devote too many pages to detailed discussion of old-fashioned regulation of but one form of transportation. The temptation to so weight material is strong, of course. Like a lawyer who finds comfort and delight in a tight system of precedents, a writer on transportation tends to like the neat, orderly world of monopoly-type regulation. (A lot of railroad people seem to, too.) For the task he has at hand there is a great deal of accurate and time-tested material. The subject lends itself as naturally to classroom discussion as do the Dialogues of Plato.

Yet, today, outside the classroom, there boils a rowdy, disorderly, patternless, bitterly competitive business of transportation. In this field the provision of transportation by the user himself is now overwhelmingly predominant in the movement of persons and is fast becoming a major and perhaps even dominant factor in the handling of freight. Between this almost statistics-less transport activity and the fully regulated common carriers, there is a burgeoning crowd of contract, semi-regulated, "lease-loan" exempt and specialized type of transport agencies which are almost as difficult to measure, to observe and to analyze. The old rules, the old meanings are gone, or going.

The task of the writers of the coming crop of textbooks on transportation is a good deal more difficult and perplexing than that of their predecessors. On the other hand, the subject material is a lot fresher and more exciting. Opportunities for sound originality were never greater.

Around here we can hardly wait for the next review copy.



ON HIS DESK the dispatcher has radio equipment to select any of the . . .

MISSOURI PACIFIC ADDS . . .

Dispatcher Control of Radio Stations

Six locally controlled wayside radio stations can now be operated by the dispatcher when the offices are closed

The Missouri Pacific, one of the pioneers in radio train communications, has extended this system rapidly, so that today radio is in service on all passenger and freight locomotives and cabooses on all main-line and branch-line trains. To obtain further benefits from the system by providing radio communication between trains and wayside offices, the Missouri Pacific has, in the past few years, installed radio in 72 wayside offices.

For example, over the 339 miles between Hoisington, Kan., and Pueblo, Colo., radio was installed in 1952 in 14 offices, including Hoisington and Pueblo, the 12 intermediate offices being spaced 17 to 39 miles apart. Radio calls can be made between adjacent wayside stations and between each wayside station and trains. The fixed stations are so spaced that a train is never out of reach of a radio base station. A secondary advantage of these wayside radio stations is that, in case the line wires are torn down by storms, instructions can be handled by radio from one station to the next. Because wind storms often damage the pole line between Hoisington and Pueblo, this territory was chosen for complete arrangement of wayside radio throughout.

Bridge Route to the Coast

On-time performance of trains is most important because this MP territory is a bridge in a transcontinental route. West coast connections are made at Pueblo with the D&RGW, which in turn connects with the WP at Salt Lake City and with the SP at Ogden, Utah. Connections

are made at St. Louis with eastern and southern railroads.

In the Hoisington-Pueblo territory, three daily freight trains (in each direction) handle through cars for connections to other railroads. In addition, daily traffic includes a local freight each way and the "Colorado Eagle" passenger train each way. These trains average four meets in the 339-mile run. Train movements are authorized by timetable and train orders over single track with automatic block signaling, sidings being equipped with hand-throw switches. The land is flat, and the railroad is practically level with few curves. The maximum permissible speed for passenger trains is 79 mph, and for freights, 55 mph.

Dust Storm Problems

Last year, severe dust storms raged across western Kansas and eastern Colorado. During these storms, visibility is so poor that trains are often required to reduce speed, thus causing delays. Dust seeps into journal boxes and mixes with the oil and packing to form a "waste grab," causing a hot box. Even when the wind is not blowing, the dust around the track "boils up" under a moving freight train to create a dust cloud that rises up over the car trucks, and this dust seeps into journal boxes.

It follows that the dispatcher frequently has the problem of changing meeting points of trains delayed by dust storms or hot boxes. He must have accurate information concerning the trains' locations. In daytime, through



WAYSIDE STATIONS for radio calls to or from trains.

open offices with wayside radio stations, which average 26 miles apart, operators can make radio calls directly to trains to ascertain reasons for, and extent of, delays.

The offices at the terminals, Hoisington and Pueblo, are open continuously, as are also the offices at NA tower (Nepesta), Ordway, Horace and Scott City. Wayside radio stations are in service at these six offices. At eight other offices operators are on duty either 8 or 16 hours daily. At night the spacing of open offices was such that there were gaps of 50 to 75 miles where trains were out of radio contact with wayside offices.

To eliminate these gaps the Missouri Pacific recently installed main-line radio control equipment at six of the wayside radio stations which are closed during night hours. This new equipment, with the additional control apparatus installed in the dispatcher's office, enables him to control these stations from his office.

How Remote Control Works

When the operator goes off duty at each of the six remotely controlled wayside radio stations, he presses a button on his radio console, putting the station under the dispatcher's control. From then on, the dispatcher has complete control of these radio stations to talk to trains and to permit trains to call him. To call a train, the dispatcher simply depresses a key for the desired station, stepping on his foot switch and talking into his microphone. His voice goes via line wire to the station and from there via radio to the train. When he steps on his foot switch, he keys the station transmitter.

Knowing the approximate location of all trains, the dispatcher can place the appropriate remotely controlled station in the position of receiving calls from trains in the vicinity. He does this by depressing a key on his console which selects this station for receiving calls. He may eliminate any station from the receiving position by depressing another key on his console. Thus, he is in a position to receive or reject calls from trains at any one or all stations within a fraction of a second. In addition, the dispatcher has his own radio console for direct radio communication with trains within range of his station using channel selection 160.41 mc for dispatcher-to-train and 160.47 mc for station-to-station calling. An equipment cabinet in his office contains the selecting system and the incoming and outgoing amplifiers.

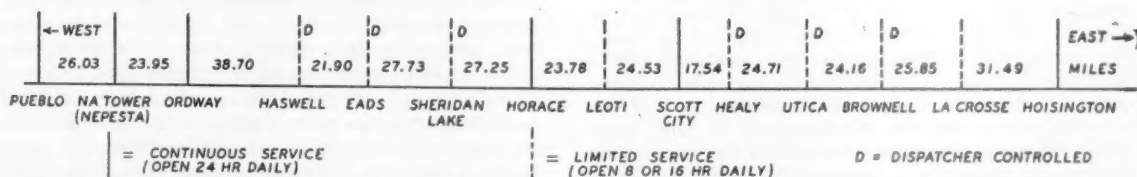
The six remotely controlled radio stations are at Haswell, Eads, Sheridan Lake, Healy, Utica and Brownell. These stations, in combination with the radio at continuous offices at Nepesta, Ordway, Horace, Scott City, Hoisington and Pueblo, provide wayside-train radio coverage throughout the entire division at all times. The results have been that the dispatcher has closer control over trains, because he knows where they are and what they are doing. This up-to-the-minute information enables him to arrange meets so that trains spend less time on sidings.

Standby Power

To assure continuity of operation, an Onan 1-kw gas-engine-driven standby power generator was installed at each radio wayside station. Two 6-volt batteries on trickle charge start the gas engine. If commercial power fails, a power-off relay drops out, connecting the battery to the engine starter. The start is practically instantaneous, so that communication is not lost. The generator supplies power for the radio equipment and for an electric light over the operator's desk. When commercial power returns, the power-off relay picks up, cutting off the stand-by generator. An electric heater in the motor compartment assures instant starting during winter months. A 50-gal fuel tank is buried outside the station.

Radio equipment at each dispatcher-controlled station includes a remote control console with three control buttons, viz.—(1) dispatcher, for remote control of station; (2) "intercom," for agent to talk to dispatcher over telephone line; and (3) local control, for agent to operate the radio station. Each station also has three plug-in rack-mounted units consisting of an incoming amplifier, outgoing amplifier and a selector unit for keying the radio.

The radio equipment for this project was furnished by Motorola, Inc., the installation work being carried out by the MP communications department under the jurisdiction of R. A. Hendrie, general superintendent of communications.



WAYSIDE RADIO stations are spaced 17 to 39 miles apart over the 339 miles between Pueblo and Hoisington.

SECOND PRIZE PAPER IN MONON-RAILWAY AGE CONTEST

What Differentials in Rates?

Some of the old ones, based on market relationships, will have to go—but some are needed in today's competitive situation

By **W. G. SCOTT**

Transportation Economist
Railway Association of Canada

The question of traditional differentials in railway rates will be considered in this essay from the standpoint of the needs of the railways in a highly competitive transportation market. Not only traditional differentials in railway rates which have evolved under monopoly conditions will be taken into account, but also the new considerations which might reasonably be expected to influence railway rate differentials under existing competitive conditions.

This paper is developed against a background of Canadian conditions, which are most familiar to the writer—but reference, where appropriate, is made to conditions in the United States and Britain.

The economist thinks of traditional differentials in railway rates in terms of differences in demand for and costs of railway service; whereas the practical traffic officer thinks more in terms of differences in the: (1) value of the commodity; (2) mileage; (3) size of shipment; (4) competition; (5) speed or relative service; and (6) type of railway equipment needed.

Differences Based on Value

The freight classification, or grouping of commodities into a limited number of classes on the basis of their value, is the classical example of traditional rate differentials. It was designed to extend market opportunities as widely as possible in the interests of encouraging both a uniform development of a country and a maximum development of railway traffic. The rates for each class of traffic were to bear a proper relationship to the rates of all other classes; and the revenues from all rates taken together were to be related to the railways' total costs. *The freight classification has represented a com-*

plex system of bonuses and taxes, taxes being levied on some commodities far above the full cost of service and bonuses given to other types of traffic which have been traditionally carried below cost.

Satisfactory as the railway rate structure was under monopoly conditions, it nonetheless was artificial, and was far removed from the normal concept of prices in a highly competitive economy. Its artificiality, moreover, became a matter of practical importance to the railways with the development of a number of competitive carriers.

What then is the practical significance to the railways of traditional rate differentials based on the value of commodities? Simply this—large blocks of high rated traffic have been, and are continuing to be, diverted from the railroads to common, contract and private carriers, not because these carriers can handle high valued commodities more economically than the railways, but rather because such traffic can be moved more cheaply than at the prevailing railway rates which are not based on the cost of individual shipments. Of even greater importance is the fact that the large profits made by motor carriers from many of these rates have enabled them to profitably back-haul certain traffic which under normal circumstances would be outside their economic sphere of operations on the basis of their true costs.

Under existing competitive conditions, the over-emphasis of "values" in the freight classification has functioned as a double-edged weapon against the railways, resulting not only in the loss of large amounts of high-rated traffic on which the railways have traditionally relied for a major proportion of their overhead costs, but also in the loss of a growing volume of low-rated traffic which is being moved as fill-up traffic in the back-haul. The real anomaly is that many of the high railway rates are nothing more than "paper" rates, as the traffic has long since been lost to the railroads. On the continuation of these "paper" rates, however, rests the strength of the railways' competitors.

Effect of Contract Carriers

An equally important consequence of the over-reliance on the value principle in rate-making has been the progressive growth of contract and private carriers. Contract carriers by being able to secure traffic on a guaranteed basis (see the case of *New Automobiles in Interstate Commerce*, 259 ICC 475) base their rates on actual costs rather than on railway rates, as do common motor carriers, and so cut into rail traffic. Then too, many large shippers of high-grade commodities, dissatisfied with common motor carrier rates, based on railway

Since this essay contest closed, Mr. Scott has been appointed general secretary of the Railway Association of Canada. The views set forth in this paper are his alone. For publication in *Railway Age* this essay is slightly abridged. It is planned to reprint as a pamphlet available from *Railway Age* the two prize-winning essays (the first of which was published in the September 19 issue, page 46), and several other papers selected by the judges as of outstanding value. Single copies of this pamphlet will be priced at \$1, with reduced prices for larger quantities.

rates, have turned in increasing numbers to private carriage. As an indication of the importance of this form of carriage, 43.4 per cent of all Canadian intercity truck traffic in 1953 was moved by private carriers alone. Efforts on the part of some regulatory boards to maintain the traditional rate differentials based on value, in the interests of preserving rate relationships between different types of commodities, cannot help but be ineffective under these circumstances.

A gradual reshaping of the freight classification will probably entail some redistribution of transportation costs between different types of commodities, but this must be accepted as an inevitable consequence of the continued growth of competition. The railways would seem to have no alternative.

This is not to suggest that value will not continue to play an important role in rate making, but rather that the upper limit for many types of traffic will be influenced in the future by the costs of private and contract carriers.

Dr. E. G. Plowman, vice-president traffic, United States Steel Company, in his Salzburg Memorial Lecture on Transportation, at Syracuse University, February 14, 1955, stated the nature of the problem in this way:

"Private truck transportation cost is becoming a competition-type upper limit of the common carrier freight rate zone of reasonableness that may gradually supplant the upper limit established by laws and regulatory decision."

Two of the most important examples of traditional railway rate differentials based on value have been the wide divergence in rates between raw materials and finished goods; and between export/import traffic and domestic traffic.

Railways cannot hope to continue to maintain the extreme differential between rates on raw material and finished goods if the manufacturers of the finished products are to turn in increasing numbers to contract and private carriage. Nor have they the ability to maintain the extremely low rates on export/import traffic in competition with water and motor carriers for higher rated domestic traffic. Canadian railways have long been faced with this problem in its most extreme form.

Mileage-Based Differences

Differentiation of rates on the distance principle has been simply another manifestation of the need for extending markets as widely as possible. The theory that tapering of rates is justified by the spreading of terminal costs over increased mileage is indeed true, but it falls far short of a full explanation of the pronounced taper which has long existed.

What then is the practical significance of the traditional railway rate differential based on distance? *A pronounced taper of railway rates results in relatively low rates where the railways' competitive position is strongest, and high rates where their competitive strength is weakest, or just the reverse of what competition demands.* Motor carrier costs, because of the small overhead component, progress in a relatively straight line as compared with rail costs. It follows that their most effective sphere of operation is in the short distance field and least effective for long hauls. But the rail differential, based on mileage, is least pro-

SOME RATE DIFFERENCES THAT ARE QUESTIONABLE

- Those based solely on "value" of the commodity, especially those which take account of "value" of competing commodities—or which underrate raw materials while overrating finished products.
- Those based on too sharp a "taper" of long-haul rates—resulting in high rates where competition exists and in low rates where it doesn't.
- Those which fail to take into account that it doesn't cost much more to haul a 30-ton carload than a 15-ton carload.
- Those which try to preserve "market relationships"—where unregulated transportation has already broken these relationships.
- Those which fail to allow a slower carrier to charge less than a fast one.

nounced for short distances, and most pronounced over long distances.

The traditional type of mileage differential under existing competitive conditions, therefore, is becoming a competitive advantage for contract and private motor carriers in short hauls, and may be unnecessarily depleting rail revenues for long haul traffic where the railways' competitive advantage is greatest. It is appreciated that the pronounced taper has been designed to develop long-haul traffic by extending marketing over wide distances. But from the standpoint of competitive strength, it is of the utmost importance that long-haul rates be no lower and short-haul rates no higher than absolutely necessary.

This principle was directly involved in the Interstate Commerce Commission's decision on new automobiles (279 ICC 377). A group of U.S. railways were prohibited from reducing their short-haul rates, to meet effective motor carrier competition, unless equivalent reductions were made on long-haul traffic, where competitive conditions were not the same. It is interesting to compare the decision of Canada's regulatory authority in an identical case on refined petroleum products (Board of Transport Commissioners, Order No. 79133, page 124). The railways' case for reduced rates on short-haul traffic, if competition is to have any meaning, is whether the proposed rates are remunerative *per se* rather than their relationship to the long-haul rates.

Differences Based on Size

Because the costs associated with carload and less-than-carload traffic are very different there has long existed a justifiable rate differential.

The important question, however, is whether the application of the principle as applied to carload minima might not be further extended to permit the railways more effectively to meet the growth of competition from contract and private carriage. The average railway car's capacity is 80,000 to 100,000 lb, yet a surprising number of carload minima range from 24,000 to 40,000 lb.

Where rail and truck rates are comparable and the rail carload and truckload minimum weights are the

same, the shippers' choice of carrier is limited solely to differences in relative service. But one of the railways' basic inherent advantages is size; and probably nowhere in the transportation industry is the law of decreasing costs brought home more forcefully than in the case of railway car loading. The following example for a 350-mile haul illustrates the decreasing nature of rail costs as car loading increases:

Minimum weight (lb)	Index Based on Actual Rail Costs; 20,000 lb = 100
20,000	100
40,000	59
60,000	41
80,000	32
100,000	29

The railways cannot afford to allow the size of shipments to become a matter of indifference to shippers in their choice of competitive carriers.

Because the railways' unit of transportation is the train, not the car, it has even been suggested that differential rate-making based on size of shipment should not stop at carload quantities. Certainly if, through the use of multiple-car and trainload rates, railways could improve their net revenue, they should have the freedom to introduce such rates. In the case of volume traffic moved by contract and private water transportation, the railways might well make use of the principle to good advantage. It is doubtful, however, whether it would improve the railways' competitive position vis-a-vis contract and private motor transport, and it might even sacrifice net revenue in some cases. This should be a matter for managerial discretion, the decision being dependent upon individual circumstances.

Differences from Competition

Differences in competitive conditions have long been recognized as justification for differential rates between shippers of the same commodity. Canada's Railway Act, for example, specifically provides for this; and the Canadian Royal Commission on Transportation, 1951, in its conclusions on competitive rates stated:

"The railways should neither be denied the right to meet competition, nor when once they have decided to publish competitive tolls . . . be forced by law to apply these same tolls . . . where competition between transportation agencies is non-existent."

The Interstate Commerce Act seems to be less precise

WHERE NEW RATE DIFFERENCES ARE NEEDED

- Those which would compensate a shipper for the reduction in cost which derives from dependability of his patronage—and which would penalize the shipper who uses the railway only as a "stand-by."
- Those which would permit lower charges on heavy-traffic, low-cost routes than are levied for equal tonnage and distance on lines which are costly to operate. The more railroads are forced to "average their costs" in their rates, the more opportunities they leave open for pick-and-choose competitors.

on this question that its Canadian counterpart, but from what Professor I. L. Sharfman says in his work on the Interstate Commerce Commission, the regulatory laws of the two countries seem to be much the same on this point. At p. 323 of Volume III, for example, he states:

"... traffic considerations may legitimately be permitted to exert a large influence in the adjustment of rate relationships."

He then lists a number of these considerations, prominent among which are "differences of competitive condition at different points"; and the commission is authorized by the act to permit the railways to charge less for longer than for shorter distances "under certain circumstances," one of which is actual competition.

The application of the law in the United States and the law itself, however, would appear to have parted company. An excellent practical illustration of this was cited in the February 28, 1955, editorial in *Railway Age*. The Burlington in an attempt to retain certain traffic—steel products—between Sterling, Ill., and the Twin Cities, in competition with a contract motor carrier, wished to reduce its rates. Regulatory orders, however, prohibited this type of specific rate action unless similar reductions were given to all other points within a fairly wide area which were served by the common supply point, Sterling. Rates for the same commodity from a number of other supply points to the common market, Twin Cities, would also have had to be reduced. The railroad had no alternative but to withhold the rate reduction, and so forgo the competitive traffic, in order to protect its revenues on traffic not subject to competition.

Who gained by this regulatory decision? One party alone—the contract motor carrier which retained the traffic. The Burlington lost revenue which it might otherwise have earned, and those shippers who had no alternative transportation facilities still had to market their goods in competition with a supplier who enjoyed a transportation cost advantage. Regulation under these circumstances fails in two respects. It is unable to guarantee equal transportation costs for all shippers; and it seriously affects the competitive strength of common carriers.

If a railway by offering one shipper a reduced rate finds itself compelled to offer the same concession to all shippers of like commodities, where competition does not exist, then the railway is faced with this economic dilemma. Either it must lose the first shipper's traffic to its competitors, or the traffic of all other shippers must be carried at equally favorable rates. If the railway accepts the first alternative it loses the potential revenue from the traffic of the shipper who has at his disposal alternative forms of transportation facilities. Accepting the second, it dissipates its revenues from the traffic of those shippers not favored with competitive facilities.

A large volume of traffic is affected by this provision of the law. For example, all commodities of the same kind which are produced in different localities and consumed in the same place or exported through the same port are regarded as the same or similar traffic.

The commission would also appear to be reluctant to give relief from the effects of competition in the case of long and short haul discrimination. The railways, therefore, lose valuable revenue at competitive points for fear of dissipating their revenues at intermediate points. The

intermediate points do not benefit, because the more distant non-competitive points simply obtain the reduced transportation costs from the railways' competitors. The intermediate points over the long pull are actually injured, because their rates are higher than they would otherwise be if the railways were allowed to share in the revenues available at the competitive points.

If railways are to effectively meet the growing competition of contract and private carriers, they must be permitted to price their services differentially, to give effect to differences in competition at different points. Prohibition against this form of differential rate-making fails to benefit the shippers it is intended to protect, because the railways are compelled to forgo the competitive traffic rather than dissipate their revenues on non-competitive traffic. Furthermore, the favored shippers gain a competitive transportation cost advantage by being able to turn to contract or private carriage. This type of restraint has contributed materially to the growth of contract and private carriers.

When Are Differentials Iniquitous?

The most important obstacle in the path of the railways' adopting a new approach to differential rate making is the concept of discrimination. *Regulation should only be interested in controlling that form of discrimination over which the railways have some effective control, such as secret rebates and concessions not justified by differences in costs or demand.* Discrimination in rates to meet competition, differential charging based on demand, should be permitted without requiring the railways to extend the competitive rate to all other traffic of a similar type, for which there is no compelling competition. Similarly, differential charging based on established difference in costs must not be allowed to become a convenient tool for the forced reduction of other rates where the same cost considerations are not applicable.

If railways are to effectively meet competition, moreover, they should be permitted to price their services differentially to meet *potential* competition. Refusal to permit the railways to do so encourages competitive forms of transportation to purchase equipment and facilities on the basis of existing rates. When competition becomes effective, however, the railways then can reduce their rates to meet it. The competitive forms of transportation, having made their investment, meet the new rail rates and a rate war has been unnecessarily precipitated. Permitting railways to meet potential competition by means of rate adjustments would do much to prevent this situation arising. Alternatively, if the shippers have set up their own private transportation facilities it is almost impossible for the railways to regain traffic lost to private carriers.

Differences in seasonal competition has also been a traditional basis, in Canada at least, for rate differentiation.

Summer and winter rates are a valuable part of the rate structure, and are simply a recognition of the test of practical rate-making, or the recovery of variable costs on the cost-service principle, and overhead costs on value of service. This principle should be retained, because the railways cannot be expected to provide stand-by capacity during certain seasons of the year when competition is ineffective without being permitted to recover their full costs of operation for year-round service.

Differences in Time or Service

Differences in types of services have long given rise to rate differentials, as evidenced by the difference in freight and express rates. As competition grows in intensity the need for reflecting differences in the service will become increasingly important.

Regulatory boards have, in fact, recognized this requirement by permitting a lower rate for water than for rail transportation because of the superiority of rail service. If competition between railways and motor carriers is to be equally effective, it would seem only logical to extend the principle to them as well. But there seems to be a reluctance to do so.

The question might well be asked how is it possible for competition to function effectively when rates are equal and service different? Under these circumstances price, one of the most important considerations of competitive enterprise, is removed as an automatic guide to relative competitive advantages of different carriers. The cards cannot help but be stacked against the carrier with the inferior service regardless of its costs relative to those of its competitors.

Time, or the service factor, should, therefore, be reflected in the rates of competing carriers if competition is to be meaningful. It is possible through regulation, where competition is between like carriers such as between railways whose cost and service characteristics are similar, to relegate rates to a secondary role. It is not possible to do so, however, where competition is between carriers of entirely different cost and service characteristics, such as motor carriers and railroads.

Differential rates to reflect differences in the cost of various type of equipment are completely sound and should be retained as part of the rate structure. Due to space limitations and the obvious justification of this type of differential it will not be examined in detail here.

New Reasons for Rate Differences

With the possible exception of rate differentials for differences in types of equipment, the predominant influence in traditional railway rate differentials has been value of service or demand considerations. Understandable as this was under monopoly conditions, competitive reality now requires that cost considerations be given at least an importance equal to that of value. This should come as no surprise to those who understand the workings of our free enterprise system. Bankruptcy courts are littered with the "carnage" of those who have failed to take heed of the basic importance of costs in competitive pricing.

Regularity Deserves a Discount

For reasons of space, consideration of this question will be confined to the two most important examples of this requirement. These are: (1) rate differentials based on regularity; and (2) rate differentials based on differences in route costs.

Regular patronage is a boon of no little importance to a business. Sharp fluctuations in demand may be likened to a dagger pointed at the financial heart of a

Benchmarks and Yardsticks

competitive business. For industries with heavy capital investment, sustained patronage is a prerequisite to the lowest possible costs of operation. Regularity produces significant cost reductions, whereas sporadic patronage has exactly the opposite effect. It is not surprising, therefore, that considerable time and money are spent, and varied techniques employed, in radio advertising to encourage "repeat orders"; or that public utilities employ a two-part tariff to recover their overhead costs regardless of the use made of their service.

Regularity, by reducing the element of risk, is of fundamental importance to railways, an industry of decreasing costs. Through advance knowledge of the demand for their services, the regular shipper permits the railways to minimize their costs of operation. It is only common business sense, therefore, for railways to recognize this important consideration in their rates. The sporadic customer who encourages the railways to invest in plant and equipment, and then uses them as stand-by facilities, is an expensive luxury. It is true that through the use of commodity rates, the railways have recognized the importance of regularity—but these have not been sufficiently effective, judging from the growth of contract and private carriage.

Canadian and British railways have been authorized to establish their own contract rates, "agreed charges," as an incentive to regular patronage. Through this form of charging they have been able to regain lost traffic, and more effectively retain what they now have.

Regularity of patronage results in lower operating costs for railways and should justifiably be reflected in railway rates for competitive reasons, at the discretion of railway management. Prohibition against doing so on the grounds of preserving rate relationships between competing shippers, moreover, is meaningless where shippers are able to turn to contract and private carriage.

Differences in Route Costs

Railways have not been permitted to differentially price their traffic to reflect differences in costs along different routes. A given class of freight must be carried between all places equidistant at very much the same rate. Yet in no aspect of rail operations do costs vary so markedly as along different routes.

The problem may be illustrated by an extreme case. A large and regular flow of traffic moving between two large centers of commerce clearly costs less to carry per unit of traffic than irregular and light traffic moving between two rural points situated the same distance apart. The large regular flow of traffic produces good utilization of equipment, and normally a balanced directional traffic flow; the light irregular traffic route is associated with just the opposite characteristics, an expensive operation. A recent cost study published by the British Transport Commission, for example, revealed that for certain types of traffic, costs on light traffic routes were as much as 40 times the cost on main lines, yet the rates were equal.

What, then, is the practical significance of the traditional prohibition against rate differentials for different routes where costs differ?

As common carriers the railways have been forced to average their costs over remunerative and unremunerative routes, resulting in rates above actual costs along heavy density routes. Contract carriers, and large shippers with
(Continued on page 46)

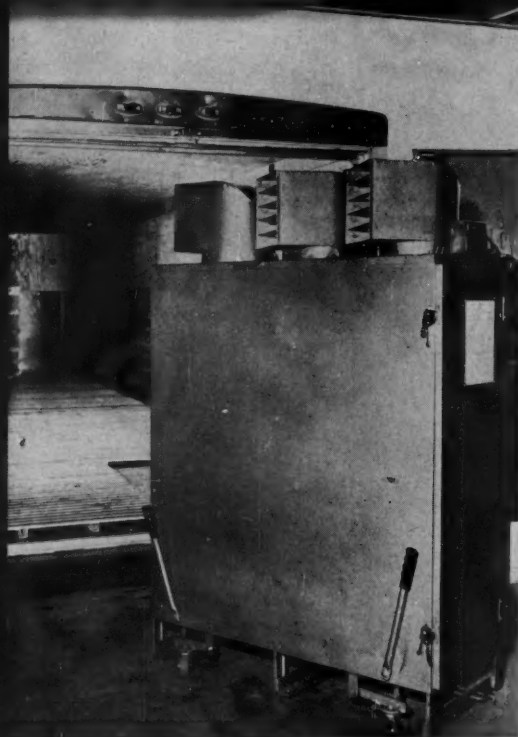
THE AMERICAN MANAGEMENT ASSOCIATION has published a highly stimulating little book entitled "Management Education in American Business." The volume is further identified as Part I of "Management Education for Itself and Its Employees." The author is Lydall F. Urwick, and this particular booklet is one of the results of a study undertaken by the Management Association with some assistance from the Fund for Adult Education. We believe this little volume can be obtained from AMA for \$1.50 (anyhow, that's how we got our copy). If there's a more informative or more stimulating book on this exciting subject, we've not yet seen it.

The present era of American business may, in future, get some such name from the historians as "the Era of Management's Emergence as a Profession." At any rate, the old idea of selecting industry executives by "moving everybody up the ladder one rung and hiring a new office boy" has pretty much gone. But the new system of selection, training and promotion hasn't yet assumed definite form, nor has it proved itself. Almost anything "is rather more than likely to happen"—as one of Branch Cabell's characters once observed.

This AMA booklet surveys what has been going on—beginning with the wholesale indifference to this problem on the part of most business in the 1920's, and prior thereto. The low esteem to which business leadership fell during the depression of the 1930's caused the traditional pattern of management selection to be looked at critically. Also, the increase in the power of unions and in government intermeddling began to call for business leaders with skills considerably more complex than those which had been sufficient for their predecessors.

Other factors also played their part in the outcome—which is that, now, a considerable portion of the country's larger and more successful corporations have definite programs for selecting and training their managers. The methods being pursued are not identical—hence it is certain that some of the plans will be more successful than others. This gives the railroads—most of them not yet very far advanced in this endeavor—a chance to look around, and to profit by others' experience. This AMA booklet is an admirable starting point for such a look around.

These programs hold out no hope of miracles. No system of selection and training will take the place of management enthusiasm, from top to bottom, for better performance by the human part of the business. But action there must be. The difference between the success or failure of a company is, usually, measured by the quality of its management. J.G.L.



THIS PORTABLE DRY ICE cooling unit, controlled by a thermostat, has three fans to circulate air.



IN PLACE INSIDE a trailer, the cooling unit occupies 8 sq ft of floor space. Because it can be moved easily, the unit can be rolled out to facilitate loading of extra-wide freight objects.

How Santa Fe Cools "Piggybacks"

A compact and portable dry ice unit proves successful in handling a large group of perishable commodities

A system for cooling trailers in "piggyback" service is proving "highly successful" on the Santa Fe. It is being used in the movement of such perishable commodities as candy, wax paper, vegetable oil products, oleomargarine and packing house products.

The new cool-trailer operation was inaugurated in August between Chicago and Kansas City. It now extends to other points in Kansas and Oklahoma. The road is considering making similar service available to shippers on the West Coast and other points.

Key to the trailer cooling arrangement is an insulated steel unit that holds 600 lb of dry ice. Designed by the Rue R. Elston Company at St. Paul, Minn., and modified to meet railroad requirements, the metal unit is portable and thermostat-controlled. It occupies 8 sq ft inside a highway trailer.

Three fans on top of the unit circulate air to maintain an even temperature in all parts of the trailer. Current to operate the fans is provided by four six-volt batteries slung beneath the trailer body. And when the trailer is at a loading dock, an extension permits the cooling unit to be plugged into an ordinary electrical outlet to conserve batteries.

The Santa Fe has not, as yet, determined precisely the ranges of temperature capable of being produced by the cooler unit. It would depend, in part, on outside temperatures and the thickness of insulation in the trailer itself. However, a spokesman for the road states the belief that "there is almost no limitation insofar as the cooler itself

is concerned." To date, the road has been "completely successful" in providing lading protection at around 40 degrees.

"We feel the unit is almost foolproof and do not anticipate any trouble with shipments en route," said George B. Kelley, assistant to the general freight traffic manager. However, as a safety feature, a small light adjacent to the batteries beneath the trailer will flash on if temperature inside the trailer varies from the thermostat setting. This light, visible to train crew or yard forces, would permit quick corrective action to avoid spoilage or lading damage.

Servicing of the cooler with dry ice is handled at the Santa Fe freighthouse in Chicago or Kansas City. The protective service is provided at the road's expense, and shippers pay no surcharge or other special rates.

The cooler itself is insulated through the application of rubber latex to the inside of the outside shell and the outside of the interior ice chamber. The unit's door also contains a layer of rubber latex. Use of this material for insulation helps guard against the possibility of rust.

A cable built into the trailer floor connects the unit with the batteries. Thus, the unit needs only to be rolled into a trailer and "plugged in." Batteries are 204 amp hr each, and the four on each trailer will operate the cooling unit fans in excess of 48 hours without recharging. Carbon dioxide gas from the dry ice is vented out the trailer floor via a duct.

Simplicity of design, portability and low initial cost

are factors that give the cooling unit a high rating with the Santa Fe. The unit can be easily rolled in or out of a trailer to facilitate loading and unloading of extra-wide objects.

The Santa Fe has, at present, five 32-ft and five 24-ft insulated trailers in its TOFC service. The road believes

it will be possible to replace the cooling unit in these trailers with a small heater in winter, thereby offering year-round protective service. Present plans in this respect call for winter use of liquid fuel heaters. These heaters are now in service in the road's standard refrigerator cars and are thermostat controlled.

AND ON THE MP...

"Speedboxes" Get a Cool New Job

Fifty containers have been converted, by insulation and a dry-ice compartment, to handle new commodities

While the Santa Fe has turned to cooling piggyback trailers, the Missouri Pacific has found that dry ice opens new vistas for the road's already well-established "Speedbox" service.

The MP recently converted 50 of its smaller "Speedboxes" (mostly 41.5-cu ft units) into insulated containers. The boxes are used for less car lot shipments of candy, dairy and packing house products and frozen foods. Dry ice is used as the cooling agent.

"This service has been well received, especially in the areas served by Kansas City warehouse operators and jobbers," says R. T. Williams, the MP's merchandise traffic manager. No special rate applies to the cooled "Speedboxes," but the shipper must provide his own dry ice.

Operation of the lightweight and mobile "Speedboxes" on the MP was inaugurated some years ago. Today, they are used between on-line points in Missouri, Kansas, Nebraska and Arkansas, and to Memphis, Tenn.

To convert 50 of these boxes for use in protective service, a thin layer of Fiberglas insulation was applied

to the inside walls, floor and top of each box. A small compartment was placed in the top to hold sufficient dry ice to protect the contents for 48 hours.

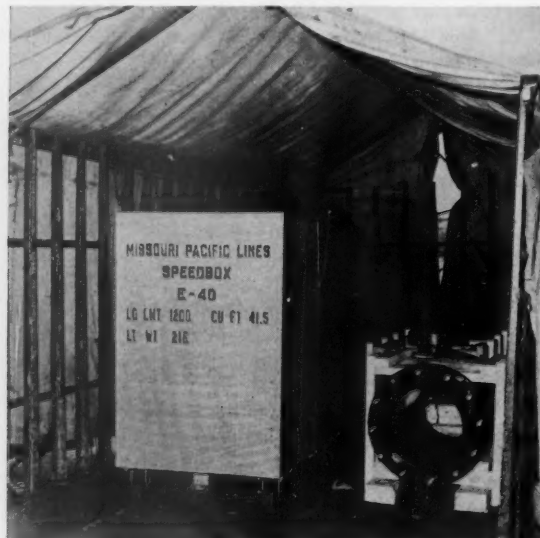
This 48-hour feature, Mr. Williams states, has been entirely adequate to give full protection. He said tests have indicated that any desired temperature may be maintained within the boxes, despite the absence of precise temperature-control apparatus.

A shipper using an insulated "Speedbox" loads the box in his own wareroom and the loaded box is picked up by MP pick-up-and-delivery service for transfer to the freight station. There it is placed in a regular merchandise car. At destination the box is delivered to the consignee's place of business where it may be unloaded at his convenience. Afterwards, the railroad picks up the box and returns it to the freight depot.

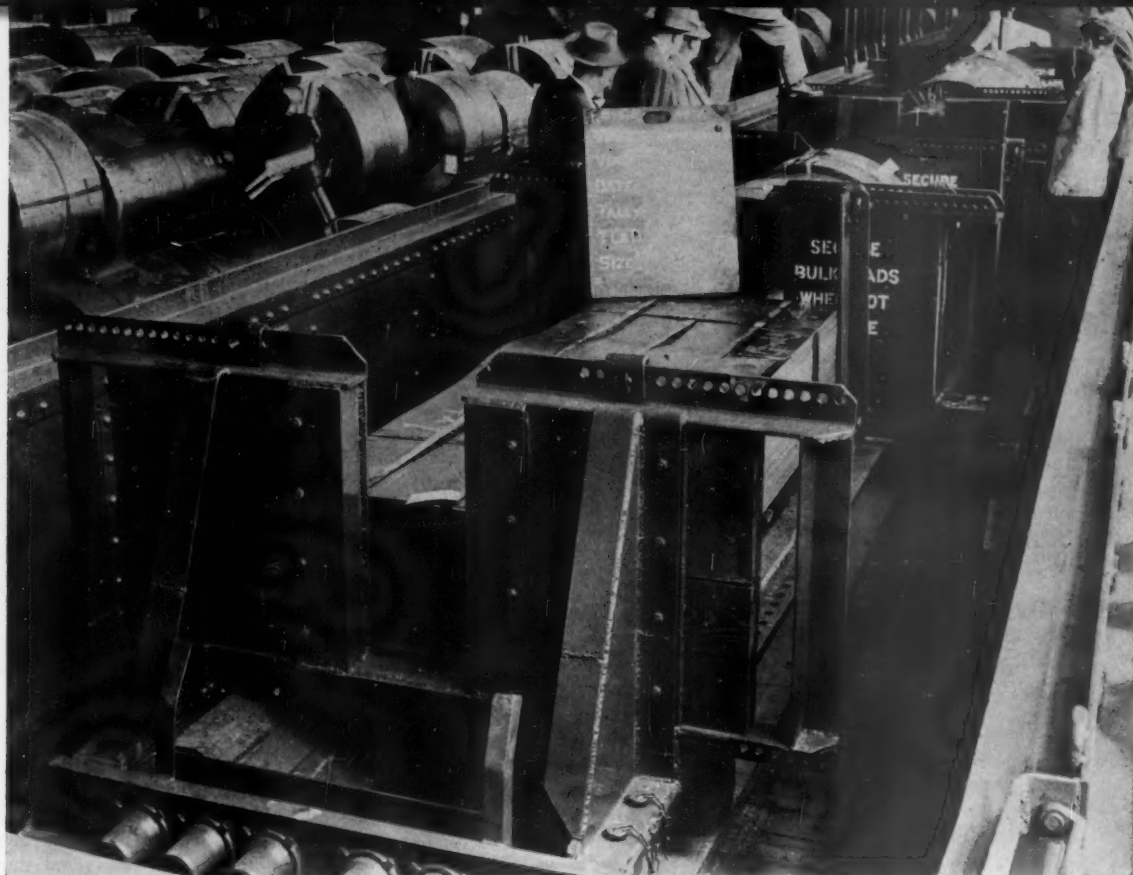
Mr. Williams points out that these insulated "Speedboxes," which like the uninsulated boxes are exclusive with Missouri Pacific, are not to be confused with the "Portacold," a unit which required regular ice as a refrigerant and needed re-icing in transit.



"SPEEDBOXES," in merchandise service on the MP for several years, have now been insulated and fitted with a compartment for dry ice. Units are fully mobile.



PROTECTIVE SERVICE for many commodities is possible with the insulated boxes. Shippers furnish their own dry ice but otherwise pay no higher rates.



COMBINATION LOAD of bundled flat steel on the skid in the foreground and coil steel on the skid immediately behind illustrates flexibility of PRR's new device for handling two types of steel shipments in open cars. Note heavy

adjustable bulkhead and side braces, which prevent lateral movement of lading. At lower left are the heavy rubber snubbers which absorb shocks to the floating skid. The devices have been installed in 65 cars.

How PRR Handles Steel on Open Cars

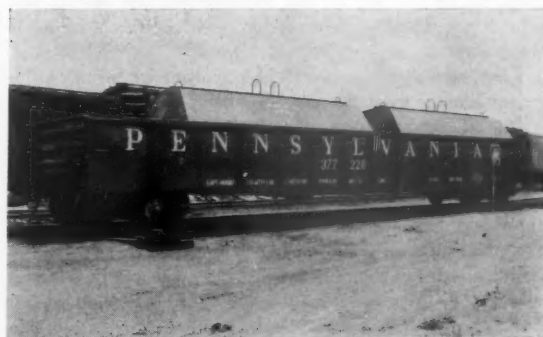
A novel skid-type load device for transporting coil steel and bundled sheet steel in open-top cars has been placed in service by the Pennsylvania. It is used with domed hoods which provide protection from weather.

The device—said by the railroad to be the only one adaptable to both flat steel and coil steel loading—is used in pairs in steel gondola cars and can accommodate both sheet and coil steel on the same skid. It eliminates need for blocking, wrapping and dunnage, and reduces loading and unloading time and expense.

Each cradle-type skid is 21 ft 9 in. long, including the heavy rubber snubbers on the end for absorbing shocks. Overall width is 7 ft 1 in. The skid is built of four 8 in. by 10 in. timbers. Inside longitudinal timbers are designed so they can be placed in position to accommodate the various types of loads. Adjustable steel bulkheads, 4 ft high, are on each end and in the center.

The skids are equipped with metal-and-wood side braces which, attached to the bulkheads, prevent lateral movement by the lading. Six adjustable insert bearing pieces, of wood and steel, support flat steel for longitudinal loading. When coil steel is loaded, bearing pieces are removed from the bed of the skid and stored in the end, between gussets, making them accessible when needed for flat steel loading.

Maximum loading length on each float-type skid is 16 ft 2 in., and each 52½-ft gondola car has a 7-ft



METAL HOOD completely covers new-type skid. Made of 1/16 in. steel sheet and domed to resist rain, snow, sleet and dirt, it has loop-type lifters at top for easy installation.

floating area on its wooden floor after the two skids and their load are in place.

The refined floating skid units were devised and perfected by the PRR's motive power department, in cooperation with the traffic department of a large automobile manufacturer. Starting with 15 cars, all equipped with the new load device in the road's own shops, the PRR had 65 such cars in service at the end of the summer.

MEMO FOR RESEARCHERS:

Probing Protective Coatings

Take a rusted metal surface—it might be on a steel bridge, or a freight car, or a signal mast—apply a protective coating to prevent further deterioration. Then these questions arise: How deep does the coating penetrate? Part way through the rust? All the way? And how much of the protective agent gets to the maximum depth?

Superficially, these may seem to be relatively simple questions with the answers not too difficult to obtain. But to secure them a group of highly trained scientists had to perform three years of intensive work. What these men did was to use the "eyes" of a radioactive tracing technique to "see" into the protective coating and to measure the amount of it at different levels of penetration down to bare metal.

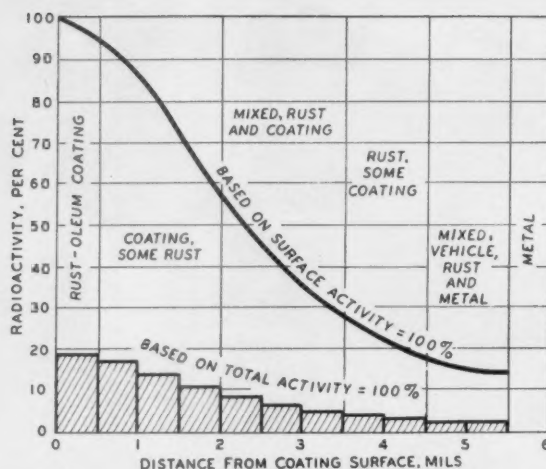
The project started with the desire of the Rust-Oleum Corporation to show how its protective coating, which has a fish-oil vehicle, penetrates through rust when applied over rusted surfaces. The question was placed in the hands of technologists at Battelle Memorial Institute in Columbus, Ohio, who thereupon were faced with the problem of developing a method of determining the degree of penetration of the coating into rust on steel.

The objective was finally accomplished by radioactivating test batches of the primer coating with C^{14} radioisotope, applying the radioactivated coating to rusted test panels, and finally lapping the coated test panels at 0.5-mil layers and taking radioactivity measurements at each level. However, behind this method and the results obtained is a story of painstaking research which included these steps:

First, it was necessary to identify one or more of the major chemical constituents in the fish-oil-based vehicle of the coating. *Second*, this constituent was synthesized, using radioactive C^{14} . *Third*, the C^{14} -labeled constituent was added to the fish-oil-based vehicle, making it radioactive. The radioactive vehicle was then processed by the manufacturer into a radioactive coating equivalent to the manufacturer's standard product. *Fourth*, the radioactive coating was applied to rusted steel test panels and allowed to dry for two weeks. *Fifth*, the coated test panels were shaved downwards from the surface at 0.5-mil intervals and radioactivity measurements taken at each level down to bare metal.

Lengthy research was devoted to examination of the fish-oil vehicle to determine which components would be most suitable for radioactive tracer synthesis studies. It was noted that a major component, common to all fish oils, is glycerol in the form of triglycerides. The glycerol portion of the fish oil was then replaced by C^{14} -labeled glycerol. This was done by obtaining the fish-oil fatty acids by saponification of fish oil, followed by re-esterification of these fatty acids with C^{14} -labeled glycerol, thereby obtaining a radioactive reconstituted fish oil.

Extensive testing and evaluation work was necessary



COMPOSITE CURVE made from results with several test specimens shows penetration of radioactive vehicle component of protective coating into rusty surfaces.

to establish the fact that the reconstituted fish oil was identical in every way to the original oil. In addition to months of laboratory testing, the manufacturer conducted exhaustive tests in laboratory weathermeters and in the extremes of atmosphere exposure areas throughout the country to be sure that the synthetic procedures used in the research to radioactivate the fish oil did not change standard product performance.

Measuring the Penetration

After more than a year of testing the radioactivated coating, the procedures to measure the penetration through rust were started. To actually determine the degree of penetration of the coating into rust, seven badly rusted steel test panels were used, with a complete log being maintained on each specimen. These test panels were scraped and wirebrushed in conformance with the coating manufacturer's standard directions for application.

The radioactive primer was then brushed on directly over the sound rusted surfaces and allowed to dry for two weeks. Following this, the coated test panels were placed in a lapping fixture that made possible controlled removal of the surface layer, using crocus cloth as an abrasive. The surface was then lapped at approximate 0.5-mil levels down to the bare metal surface, and the radioactivity in the coating measured at each level by Geiger-Mueller tube and Gas Flow Proportional Counter.

The results show that the protective coating does penetrate through the rust to the bare metal with approximately 15 per cent of the surface radioactivity being found at bare metal. Also revealed was the fact that the coating pigment and fish-oil vehicle combined penetrate to about 4.5 mils in depth. From there the fish-oil vehicle alone penetrates through the remaining rust to the bare metal surface at approximately 6.0 mils distance from the coating surface.

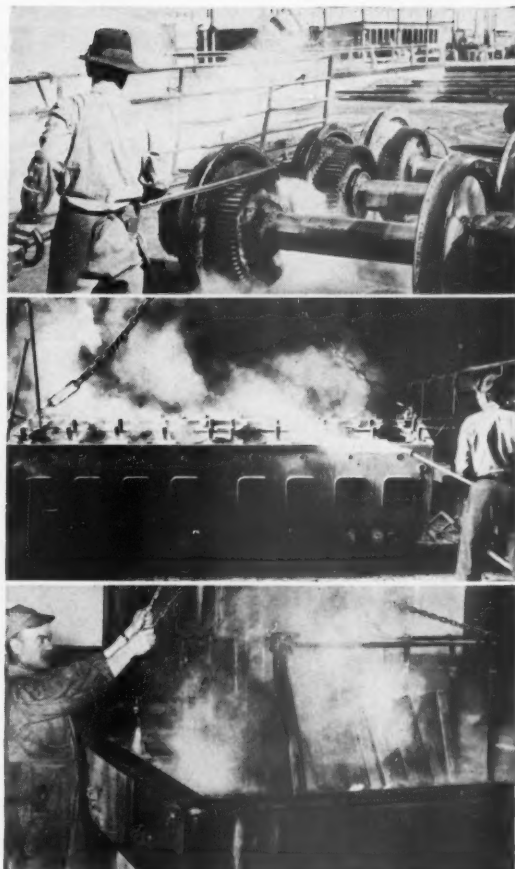
Results also showed the affinity which fish oil has for rust. For example, where rust had formed in deep pits or pockets in the bare metal, definite radioactivity was recorded even at that depth.

20 Jobs in DIESEL SHOPS and Terminals where OAKITE CLEANING is saving money for many roads

At the right are listed 20 of the many different types of work performed in Diesel-electric shops and terminals. It is on just such jobs as these that Oakite cleaning, washing, and descaling materials — and methods — have been so instrumental in saving time and money.

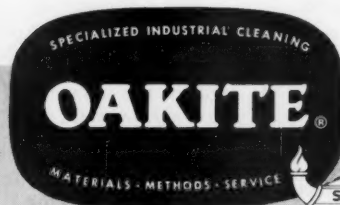
On these and many other similar jobs, Oakite Technical Service Representatives have accumulated vast stores of solid knowledge and practical experience. It is this knowledge, experience, and understanding of modern cleaning techniques that enables them to submit recommendations which result in greater cleaning efficiency and economy in practically every maintenance and overhaul operation.

And it is this same exacting attention to details, this same personal interest in every job, that has prompted so many roads to rely on their Oakite Technical Service Representatives wherever cleaning is concerned. Why not put Oakite experience and service to work for you? Call or write today for details. Oakite Products, Inc., 46 Rector Street, New York 6, New York.



Equipment on which Oakite Cleaning, Washing and Descaling Operations are Performed

Panel Type Air Filters	Water & Oil Radiators
Intake Filters	Engine Rooms, Cabs
Lube Oil Filter	Diesel Motors
Lube Oil Coolers	Diesel Locomotives
Fuel Oil Filters	Trucks, Frames
Suction Strainers	Brake Equipment
Diesel Cooling Systems	Traction Motors
Flash Type Generators	Journal Boxes
Pistons, Cylinder Liners	Generators
Engine Parts	Water & Fuel Pumps



Export Division Cable Address: Oakite

RAILWAY DIVISION



Bell System helps NYC cut

The Central's new expedited Chicago-New York freight train, NY-CD-4, pulls into Niles, Mich., a division point. It is running on a close schedule—as little as 22 hours.

Pickup cars have been pre-blocked and spread on assigned tracks. They are cut into the train while the crew and caboose are being changed. Train NY-CD-4 pulls out of Niles in half the normal time. How's it done?

Teletypewriter a Major Aid

The major aid is the teletypewriter network recently installed by the Bell System for yard-to-yard mechanized car reporting. While the train was en route, the Niles division point received and reviewed an advance consist. They were ready for NY-CD-4 when it arrived.

This is the beginning of what Fred N. Nye, the Central's Director of Trans-

portation Research, calls "a new era in control of train and car movements."

The present Bell System private line teletypewriter network connects Central freight yards, extending from New York to Buffalo, Detroit, Chicago, Cleveland, Indianapolis and St. Louis.

How's it working out? Here are a few comments along the line.

Right Spot Without Lights

A switchman says, "I could go out without a light at night right to the spot where I switch Detroit cutouts. We can do our work in half the time."

(The Bell System private line teletypewriter service gives yard forces consists far enough in advance for them to schedule switching and to arrange for power and crew requirements. Information includes the type, contents, weight and destination of each car on the train.)

A Central official reports, "At one location the fast dispatch of several empty cars to a new customer produced revenue to exceed the monthly rental of the teletypewriter service there."

(With consists arriving by teletypewriter, the advance yard can quickly locate empty cars to meet customer needs in special situations.)

Saves Cutouts

A yard man says, "This advance icing information is going to save us many cutouts this summer and save the company on claims for delay and spoilage."

(The teletyped consists tell advance yards if shipments are perishable or require special handling.)

This system, which will connect 69 of the Central's principal yards, will give hour-by-hour information on 1000 freight trains and 60,000 freight cars



Loading and switching operations in Central's yards, like the Weehawken yards above, have been speeded up by a Bell System mechanized car reporting system.

schedules by hours

daily. It will speed up car-reporting and permit the Central to give shippers the exact whereabouts of their loaded cars.

This Bell System private line teletypewriter network provides the communications which will eventually be used in conjunction with the New York Central's punch card and electronic accounting machines.

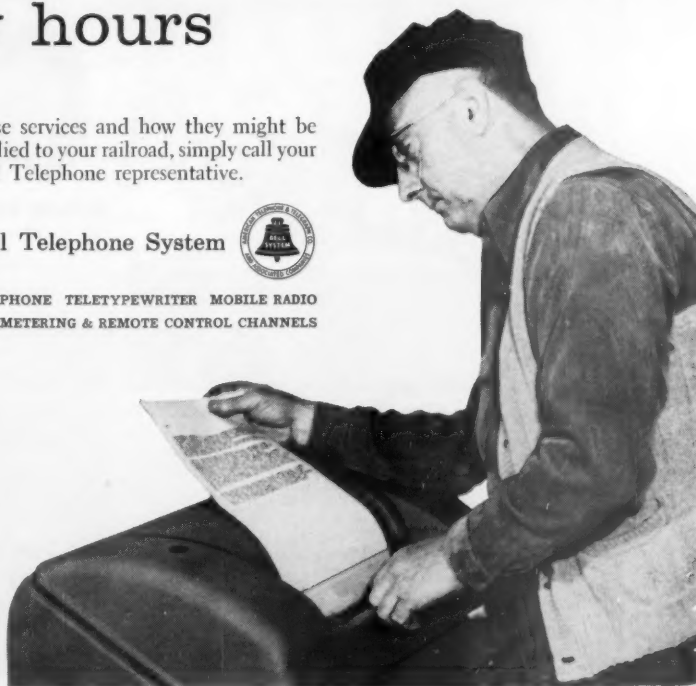
This is still another example of how the Bell System tailors its private line services for railroads' specific needs. If you would like to know more about

these services and how they might be applied to your railroad, simply call your Bell Telephone representative.

Bell Telephone System



TELEPHONE TELETYPEWRITER MOBILE RADIO
TELEMETERING & REMOTE CONTROL CHANNELS



The yard-to-yard teletypewriter network is used to send consists to advance yards while trains are en route. Because yards can program their work in advance, some new Central expedited freight trains have cut hours from their schedules!

NEW



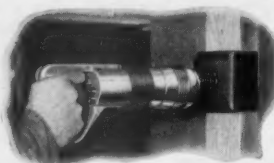
Interchangeable barrels for $\frac{1}{4}$ " and $\frac{3}{8}$ " studs



Operator can change from one barrel to the other in seconds, right on the job! No time lost in going from medium- to heavy-duty work—no need for second tool!



A squeeze of the trigger and the job is done!



Anchoring wood furring to steel . . . steel angle to concrete

Compact tool can be used overhead, in tight places—anywhere a man can go. No outside power source required!

**tool cuts costs on all stud
fastening jobs!**

with the
Double-Duty
REMINGTON STUD DRIVER

**You can anchor both $\frac{1}{4}$ " and $\frac{3}{8}$ " studs
in steel or concrete... instantly!**

Here's the first cartridge-powered tool that can cut your costs on practically all construction fastening—light, medium and heavy duty. It's the new Model 455 Remington Stud Driver!

The secret of this amazing versatility lies in the tool's construction. *Two* sizes of studs can be used— $\frac{1}{4}$ " and $\frac{3}{8}$ ". Changeover in barrels takes only 90 seconds *right on the job*. With either size, an operator can set up to 6 studs per minute... anchor conduit clips, wood sections, steel frames and many more fixtures with a squeeze of the trigger!

What powers the Stud Driver? Remington 22 and 32 caliber cartridges for the $\frac{1}{4}$ " and $\frac{3}{8}$ " studs respectively. For special medium-duty applications, the smaller cartridge may be used with the larger

stud, giving an extra-strong fastening at a saving. Every stud is driven arrow-straight, whatever the combination.

GET ALL THE FACTS about this new, useful fastening tool that goes anywhere, works anywhere—without wires or cables, hammering or predrilling. The Model 455 Remington Stud Driver makes the toughest fastening job a one-man, one-tool job and saves you time and money with every application! Just clip the coupon below for full details.

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Remington Arms Co., Inc., Bridgeport 2, Conn.

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Name _____ Position _____

Firm _____

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City _____ State _____

R.A.-10



"If It's Remington—It's Right!"

Remington 

WHAT DIFFERENTIALS IN RATES?

(Continued from page 36)

the resources to operate private transportation—recognizing the artificiality of rates along these routes, and free from any requirement to provide service which is unremunerative—have tended to concentrate their operations between large centers along heavy density routes, where capacity loads are available as well as fill-up traffic when required. The same is also true for the railways' so-called common carrier competitors. The result has been a distortion of competition.

To rectify the situation, railways should be permitted to establish differential rates to reflect differences in costs between routes.

Failure to permit them to do so will simply further encourage the growth of contract and private carriers, and undermine the competitive strength of railways, the only true common carrier. Attempts to preserve the rate relationships between shippers on main lines and off-line points cannot be effectively maintained in any case, because of the ability of volume shippers located along heavy-traffic arteries to circumvent regulatory objectives by the use of contract carriers or by the establishment of their own private transportation.

Cost and Value, Both Important

There are those who contend that cost considerations alone should determine the role of rate differentials in a competitive transportation industry, and there are those who hold just the opposite view that value-of-service or

market considerations, long the most important influence in traditional railway rate differentials, should be even further extended if the railways are to effectively compete in today's transportation market. It is the contention of this writer that the answer still lies in the intelligent use of both principles but with a change in the emphasis of each.

Low costs are consistent with regularity and volume which are found primarily along main traffic routes over which the railways have long ceased to monopolize traffic. Economic realism, therefore, requires the railways to reflect in their rates, to a greater degree than they have been permitted to do in the past, the effects of regularity, heavy loading and sustained patronage. From the standpoint of competition, the railways' strength lies in long-haul traffic which they should be careful not to dissipate by unnecessarily low rates; and conversely their weakness is to be found in the short-haul field where the pronounced effect of the tapering principle tends to intensify their competitive problem.

Value of service still has an important contribution to make in competitive rate-making, but greater stress will have to be laid on "service" relative to that of other carriers, and less on the "value" of the commodity *per se*. *The costs of other carriers must be the determinant of the upper limit of rail rates rather than the value of the commodity.* The competitive requirements of carriers, moreover, rather than the maintenance of rate relationships which cannot be effective with the growth of unregulated carriage, should be recognized. Arbitrary extension of the benefits of competition to points where it does not in fact exist can have only one result—depletion of potential rail revenues and the continued growth of contract and private transportation.

Railway Officers

Frisco Plans to Revamp Its Traffic Department

To bring its traffic personnel "closer to its customers," the St. Louis-San Francisco is planning major changes in its traffic department on November 1.

Five regional sales and services offices will be created. New top-level offices will be at Atlanta, Ga., San Francisco and Pittsburgh. In addition, two freight traffic managers will be at St. Louis—one with jurisdiction over the central region of the country, and the other in charge of all on-line traffic offices.

Each regional manager will have direct responsibility for gross sales of transportation of the company within his territory.

"Under the new setup the freight traffic managers will have wide latitude to make decisions which hitherto have had to await handling from the general office in St. Louis," J. W. Tipton, general freight traffic manager, said.

"Their supervision will extend to all personnel in the regions and their

responsibility will apply to budgeting, quotas, analysis of markets for transportation sales, commodities and personnel performance," he added.

Freight traffic managers handling the new regional offices will be W. T. Rutherford at Pittsburgh; V. H. Biedermann, Atlanta; Frank L. Coulter, San Francisco; Carl H. Gray, St. Louis (central region offices), and Howard H. Knuth, St. Louis (on-line offices).

The Pittsburgh office will have jurisdiction over offices in eight Eastern and New England cities; the Atlanta office will supervise traffic offices in five Southeastern states and Havana, Cuba; and the San Francisco office will have jurisdiction over offices in the West, extending eastward to Denver.

SP's New Passenger-PR Plan Is System Wide

As a follow up to similar changes on its Pacific lines, the Southern Pacific has merged its passenger and public relations departments for Texas and Louisiana lines into one department.

Under the new organization, H. H. Gray, passenger traffic manager at

Houston, has been named passenger traffic—public relations manager. Other similar changes are being made within Mr. Gray's department.

Direct supervision of public relations will continue to be handled by J. C. Carter, executive assistant-public relations.

The first step toward merging these two SP departments was made September 1 on the west coast, when Claude E. Peterson, vice-president, system passenger traffic, was named vice-president, system passenger traffic—public relations (*Railway Age*, August 29, page 43).

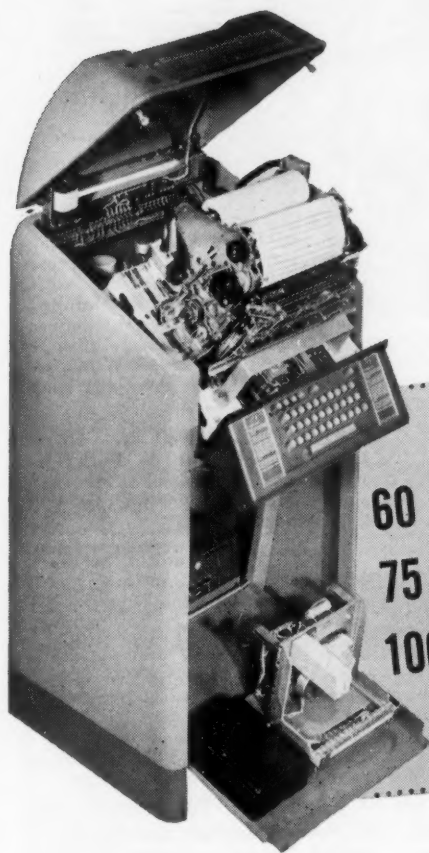
Commenting on this latest step in the merger, an SP announcement said authority for all matters relating to company policy on the lines in Texas and Louisiana will continue to be vested in the executive vice-president, B. S. Sines.

"All other activities in the new department will come under the supervision of Mr. Peterson . . . [whose] authority will extend over all passenger traffic and public relations matters on the system basis," the announcement stated.

ALABAMA. TENNESSEE & NORTHERN (FRISCO).—C. A. McLeod has been appointed assistant

Lubrication Intervals

for TELETYPE 28



60 wpm—3,000 hours operation or 1 year
75 wpm—2,400 hours operation or 9 mos.
100 wpm—1,500 hours operation or 6 mos.
(Based on 8-hour day operation)

As you can see, the lubrication interval for the new Teletype Page Printer is extended beyond anything before known in printing telegraphy. In fact, all elements of the new Teletype Printer have been designed with attention-free operation in mind.

There's the new featherweight carriage, featuring a 2-ounce Typebox, that replaces the conventional typebasket carriage weighing 10 times as much . . . and the all-steel clutch which eliminates the frequent lubrication required by the felt clutch in most other telegraph printers.

Motions are softer, loads are lighter, there's less friction, less heat.

The result is that this new Teletype Printer cuts maintenance to as little as one-fifth of that

normally required for equipment not having these new features.

If you would like complete information on this revolutionary new Teletype Printer, contact your telephone company or other communications company or write to our new customer service office: Teletype Corporation, Dept. RA10, 4100 Fullerton Ave., Chicago 39, Ill.



superintendent—roadmaster at York, Ala.

NEW HAVEN.—As reported in *Railway Age* September 12, page 72, the following appointments have been made: **W. J. Harlow**, general master mechanic; **Wilson E. Symons**, superintendent of equipment; **Russell H. Davis**, general shop superintendent;



W. J. Harlow



Wilson E. Symons



Russell H. Davis

dent; **Carl L. Hartshorn**, superintendent of power plants and facilities and **Virgil F. Dowden**, electrical engineer.

Arthur J. Beaton, assistant comptroller at New Haven, has been pro-

moted to deputy comptroller. **Hollis H. Coyle**, assistant to comptroller (cost and statistics) has been named



Carl L. Hartshorn



Virgil F. Dowden

assistant comptroller (revenue accounts and cost analysis). **Raymond C. Carmichael**, auditor disbursements, has been appointed assistant comptroller (disbursements, payrolls and freight claim accounting). **George Syat**, methods assistant, has become assistant to comptroller. **Walter V. Robertson**, assistant auditor of disbursements, has been named auditor of disbursements.

Charles F. Yardley has been appointed assistant to general superintendent of transportation. Mr. Yardley has been on leave of absence from the New Haven since 1953 to serve as assistant director, LCL research, Association of American Railroads, at Chicago.

PENNSYLVANIA.—Effective November 1, reorganization of this road's managerial setup (*Railway Age*, October 10, page 46), will result in establishment under Vice-President J. P. Newell of a system transportation and maintenance department headed by A. J. Greenough, vice-president—transportation and maintenance. Principal officers in this department include:

C. E. Alexander, mgr.—labor relations;
T. C. Stiegler, budget mgr.;
J. D. Morris, gen. mgr.—transportation;
A. F. McSweeney, mgr.—freight train operations;
H. C. Kohout, mgr.—TrucTrain service;
W. C. Allen, mgr.—transportation engineering;

R. L. Agnew, supt.—psgr. train operations;
E. E. Ernest, mgr.—operating rules;
George Falk, mgr.—motive power control bur.;
T. F. Schackel, mgr.—car & vice records;
H. T. Cover, asst. vice-pres.—chief mech. off.
W. O. Teufel, asst. chief mech. off.;
H. M. Wood, asst. chief mech. off.—car;
C. I. Clugh, mgr.—heavy repair shops;
H. L. Decker, mech. eng.;
J. Stair, Jr., elec. eng.;
M. A. Finney, eng.—tests (Altoona);
J. L. Parker, mgr.—methods and cost control;
C. H. Bowers, supt.—equipment expenditures;
J. N. Abbott, supt.—floating equipment;
T. J. Boring, supt.—MCB clearing house;
S. R. Hursh, chief eng.;
L. E. Gingerich, asst. chief eng.—maint.;
C. J. Henry, asst. chief eng.—const.;
J. E. South, asst. chief eng.—structures;
W. G. Salmonson, asst. chief eng.—communications and signals;
C. J. Code, asst. chief eng.—tests;
M. C. Bitner, mgr.—methods and cost control;
T. W. Hamilton, genl. supt.—police.

PEORIA & PEKIN UNION.—**Raymond H. Jackson** has been appointed chief interchange inspector and general car foreman at Peoria, Ill., succeeding **George R. Maloney**, chief interchange inspector, who retired October 1 after more than 49 years of service. **Herman Witzig** has been named assistant chief interchange inspector.

READING.—**Alfred W. Hesse, Jr.**, and **Lockwood W. Fogg, Jr.**, assistant general solicitors, have been appointed assistant general counsel at Philadelphia.

SANTA FE.—**Frank J. Steinberger**, assistant general purchasing agent at Chicago, has been appointed senior assistant general purchasing agent there.

SEATRAN LINES, INC.—**Parker Brownell**, vice-president and general counsel at New York, has resigned to enter private practice of law as a member of the New York law firm of Satterlee, Browne & Cherbonnier.

SOUTHERN PACIFIC.—**Charles F. Smurr**, assistant general agent at Detroit, has been promoted to general agent there, succeeding **Robert McDowell**, whose retirement was noted in *Railway Age*, October 3, page 51.

TOLEDO, PEORIA & WESTERN.—**Donald O. Schroen**, general agent at Tulsa, has been named general agent of a new TP&W agency at Dallas, Tex. **Harold E. Reeves** has been transferred from Wichita, Kan., to succeed Mr. Schroen at Tulsa.

OBITUARY

Samuel J. Hungerford, 83, former president and chairman of the board of the **Canadian National**, died October 7 at Farnham, Que., after a long illness. Mr. Hungerford retired in 1942.

Thomas C. Schley, 62, deputy comptroller of the **Gulf, Mobile & Ohio** at Mobile, Ala., died October 3.

William Hamler, 76, who retired in December 1947 as superintendent of the St. Lawrence, Adirondack and Ottawa divisions of the **New York Central** at Watertown, N.Y., died October 10 at his home in that city.

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SASH FOR EVERY TYPE OF TRANSPORTATION—ON LAND, ON THE SEAS, IN THE AIR

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A highly dependable, superior bolt used in bridge and trestle construction. Forged from S.A.E. 1045 steel. Patented fins prevent turning. Sealtite washer nut adds strength, stops seepage. Available in Hot-Dip Galvanized finish for greater durability and economy.

Used by 85% of
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Also available
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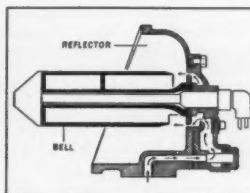


Sounds *exactly* Like
A STEAM WHISTLE...



It's the new

HANCOCK *AIR* WHISTLE
for Diesel-Electric Locomotives



For safety's sake, more and more Diesel-Electrics are being equipped with the new Hancock Type 4700 Locomotive Air Whistle. It sounds *exactly* like the old familiar steam whistle, yet air consumption is so low, the efficiency of the air-brake operation is in no way affected.

The Hancock Locomotive Air Whistle has no moving parts—no adjustment possible or necessary. It always sounds the same pleasing 3-note chord. Carrying power is excellent. The bowl-like reflector stimulates air motion—amplifies the sound; swirls it out in all directions. The whistle can be heard clearly more than two miles away, yet is not objectionable to the human ear close by, nor injurious to the hearing of engine crews. Furthermore, those who live within the range of the Hancock Air Whistle prefer the call of the time-honored steam whistle it duplicates so precisely.

The new Hancock Type 4700 Locomotive Air Whistle culminates more than 50 years of experience in manufacturing locomotive whistles. Learn all about it. Write for complete information today.



MANNING, MAXWELL & MOORE, INC.



Railway Equipment Sales, Watertown, Massachusetts
Makers of 'American' Industrial Instruments, 'Ashcroft' Gauges, 'Consolidated' Safety and Relief Valves, 'American-Microson' Industrial Electronic Instruments, Stratford, Conn., 'Consolidated' Safety Relief Valves, Tulsa, Okla., 'Hancock' Valves, Watertown, Mass., Aircraft Control Products, Danbury & Stratford, Conn., and Ingleswood, Calif., 'Shaw-Box' and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and Other Lifting Specialties, Muskegon, Mich.

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)
MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1955

Name of Road	Average mileage operated during period	Operating Revenues (thous. miles)				Operating Expenses (thous. miles)				Operating Expenses (thous. miles)				Operating ratio 1955-1954	Net from railway operation 1955	Railway tax accruals 1955	Net railway operating income 1955
		1955	1954	1953	1952	1955	1954	1953	1952	1955	1954	1953	1952				
Alton, Canton & Youngstown.....	Aug.	171	171	171	171	171	171	171	171	171	171	171	171	71.2	86.6	\$43	\$43
Atchafalaya, Topeka & Santa Fe.....	Aug.	171	171	171	171	171	171	171	171	171	171	171	171	71.2	86.6	\$43	\$43
Atchafalaya, Topeka & Santa Fe.....	8 mos.	13,098	13,098	13,098	13,098	13,098	13,098	13,098	13,098	13,098	13,098	13,098	13,098	71.2	86.6	\$43	\$43
Atlanta & St. Andrews Bay.....	Aug.	82	82	82	82	82	82	82	82	82	82	82	82	71.2	86.6	\$43	\$43
Atlanta & St. Andrews Bay.....	8 mos.	6,148	6,148	6,148	6,148	6,148	6,148	6,148	6,148	6,148	6,148	6,148	6,148	71.2	86.6	\$43	\$43
Atlanta & West Point.....	Aug.	93	93	93	93	93	93	93	93	93	93	93	93	71.2	86.6	\$43	\$43
Atlanta & West Point.....	8 mos.	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	71.2	86.6	\$43	\$43
Western of Alabama.....	Aug.	133	133	133	133	133	133	133	133	133	133	133	133	71.2	86.6	\$43	\$43
Western of Alabama.....	8 mos.	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	71.2	86.6	\$43	\$43
Atlantic & Danville.....	Aug.	205	205	205	205	205	205	205	205	205	205	205	205	71.2	86.6	\$43	\$43
Atlantic & Danville.....	8 mos.	16,582	16,582	16,582	16,582	16,582	16,582	16,582	16,582	16,582	16,582	16,582	16,582	71.2	86.6	\$43	\$43
Atlantic Coast Line.....	Aug.	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	71.2	86.6	\$43	\$43
Atlantic Coast Line.....	8 mos.	43,411	43,411	43,411	43,411	43,411	43,411	43,411	43,411	43,411	43,411	43,411	43,411	71.2	86.6	\$43	\$43
Charleston & Western Carolina.....	Aug.	343	343	343	343	343	343	343	343	343	343	343	343	71.2	86.6	\$43	\$43
Charleston & Western Carolina.....	8 mos.	28,797	28,797	28,797	28,797	28,797	28,797	28,797	28,797	28,797	28,797	28,797	28,797	71.2	86.6	\$43	\$43
Baltimore & Ohio.....	Aug.	6,148	6,148	6,148	6,148	6,148	6,148	6,148	6,148	6,148	6,148	6,148	6,148	71.2	86.6	\$43	\$43
Baltimore & Ohio.....	8 mos.	51,113	51,113	51,113	51,113	51,113	51,113	51,113	51,113	51,113	51,113	51,113	51,113	71.2	86.6	\$43	\$43
Staten Island Rapid Transit.....	Aug.	29	29	29	29	29	29	29	29	29	29	29	29	71.2	86.6	\$43	\$43
Staten Island Rapid Transit.....	8 mos.	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	71.2	86.6	\$43	\$43
Bangor & Aroostook.....	Aug.	602	602	602	602	602	602	602	602	602	602	602	602	71.2	86.6	\$43	\$43
Bangor & Aroostook.....	8 mos.	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	71.2	86.6	\$43	\$43
Bennett & Lake Erie.....	Aug.	205	205	205	205	205	205	205	205	205	205	205	205	71.2	86.6	\$43	\$43
Bennett & Lake Erie.....	8 mos.	16,582	16,582	16,582	16,582	16,582	16,582	16,582	16,582	16,582	16,582	16,582	16,582	71.2	86.6	\$43	\$43
Boston & Maine.....	Aug.	1,576	1,576	1,576	1,576	1,576	1,576	1,576	1,576	1,576	1,576	1,576	1,576	71.2	86.6	\$43	\$43
Boston & Maine.....	8 mos.	12,706	12,706	12,706	12,706	12,706	12,706	12,706	12,706	12,706	12,706	12,706	12,706	71.2	86.6	\$43	\$43
Cambria & Indiana.....	Aug.	35	35	35	35	35	35	35	35	35	35	35	35	71.2	86.6	\$43	\$43
Cambria & Indiana.....	8 mos.	2,879	2,879	2,879	2,879	2,879	2,879	2,879	2,879	2,879	2,879	2,879	2,879	71.2	86.6	\$43	\$43
Canadian Pacific Lines in Maine.....	Aug.	234	234	234	234	234	234	234	234	234	234	234	234	71.2	86.6	\$43	\$43
Canadian Pacific Lines in Maine.....	8 mos.	1,933	1,933	1,933	1,933	1,933	1,933	1,933	1,933	1,933	1,933	1,933	1,933	71.2	86.6	\$43	\$43
Canadian Pacific Lines to Vermont.....	Aug.	90	90	90	90	90	90	90	90	90	90	90	90	71.2	86.6	\$43	\$43
Canadian Pacific Lines to Vermont.....	8 mos.	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	71.2	86.6	\$43	\$43
Central of Georgia.....	Aug.	1,764	1,764	1,764	1,764	1,764	1,764	1,764	1,764	1,764	1,764	1,764	1,764	71.2	86.6	\$43	\$43
Central of Georgia.....	8 mos.	14,791	14,791	14,791	14,791	14,791	14,791	14,791	14,791	14,791	14,791	14,791	14,791	71.2	86.6	\$43	\$43
Central of New Jersey.....	Aug.	613	613	613	613	613	613	613	613	613	613	613	613	71.2	86.6	\$43	\$43
Central of New Jersey.....	8 mos.	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	5,288	71.2	86.6	\$43	\$43
Central Vermont.....	Aug.	422	422	422	422	422	422	422	422	422	422	422	422	71.2	86.6	\$43	\$43
Central Vermont.....	8 mos.	3,437	3,437	3,437	3,437	3,437	3,437	3,437	3,437	3,437	3,437	3,437	3,437	71.2	86.6	\$43	\$43
Chesapeake & Ohio.....	Aug.	5,113	5,113	5,113	5,113	5,113	5,113	5,113	5,113	5,113	5,113	5,113	5,113	71.2	86.6	\$43	\$43
Chesapeake & Ohio.....	8 mos.	43,411	43,411	43,411	43,411	43,411	43,411	43,411	43,411	43,411	43,411	43,411	43,411	71.2	86.6	\$43	\$43
Chicago & Eastern Illinois.....	Aug.	868	868	868	868	868	868	868	868	868	868	868	868	71.2	86.6	\$43	\$43
Chicago & Eastern Illinois.....	8 mos.	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	7,921	71.2	86.6	\$43	\$43
Chicago & Illinois Midland.....	Aug.	130	130	130	130	130	130	130	130	130	130	130	130	71.2	86.6	\$43	\$43
Chicago & Illinois Midland.....	8 mos.	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	71.2	86.6	\$43	\$43
Chicago & North Western.....	Aug.	7,820	7,820	7,820	7,820	7,820	7,820	7,820	7,820	7,820	7,820	7,820	7,820	71.2	86.6	\$43	\$43
Chicago & North Western.....	8 mos.	64,165	64,165	64,165	64,165	64,165	64,165	64,165	64,165	64,165	64,165	64,165	64,165	71.2	86.6	\$43	\$43
Chicago, Burlington & Quincy.....	Aug.	8,807	8,807	8,807	8,807	8,807	8,807	8,807	8,807	8,807	8,807	8,807	8,807	71.2	86.6	\$43	\$43
Chicago, Burlington & Quincy.....	8 mos.	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	71.2	86.6	\$43	\$43
Chicago Great Western.....	Aug.	1,470	1,470	1,470	1,470	1,470	1,470	1,470	1,470	1,470	1,470	1,470	1,470	71.2	86.6	\$43	\$43
Chicago Great Western.....	8 mos.	12,706	12,706	12,706	12,706	12,706	12,706	12,706	12,706	12,706	12,706	12,706	12,706	71.2	86.6	\$43	\$43
Chicago, Indianapolis & Louisville.....	Aug.	541	541	541	541	541	541	541	541	541	541	541	541	71.2	86.6	\$43	\$43
Chicago, Indianapolis & Louisville.....	8 mos.	4,343	4,343	4,343	4,343	4,343	4,343	4,343	4,343	4,343	4,343	4,343	4,343	71.2	86.6	\$43	\$43
Chic., Milw., St. Paul & Pacific.....	Aug.	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	10,641	71.2	86.6	\$43	\$43
Chic., Milw., St. Paul & Pacific.....	8 mos.	87,333	87,333	87,333	87,333	87,333	87,333	87,333	87,333	87,333	87,333	87,333	87,333	71.2	86.6	\$43	\$43
Chicago, Rock Island & Pacific.....	Aug.	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	71.2	86.6	\$43	\$43
Chicago, Rock Island & Pacific.....	8 mos.	64,165	64,165	64,165	64,165	64,165	64,165	64,165	64,165	64,165	64,165	64,165	64,165	71.2	86.6	\$43	\$43
Chic., St. Paul, Minn. & Omaha.....	Aug.	1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616	71.2	86.6	\$43	\$43
Chic., St. Paul, Minn. & Omaha.....	8 mos.	13,098	13,098	13,098	13,098	13,098	13,098	13,098	13,098	13,098	13,098	13,098	13,098	71.2	86.6	\$43	\$43
Clinchfield Railroad.....	Aug.	304	304	304	304	304	304	304	304	304	304	304	304	71.2	86.6	\$43	\$43
Clinchfield Railroad.....	8 mos.	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	71.2	86.6	\$43	\$43

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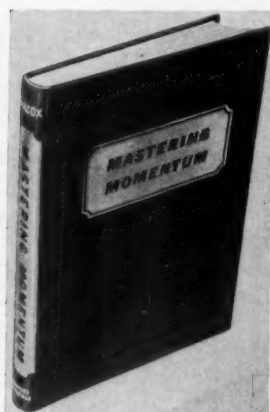
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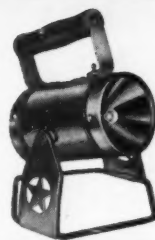
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REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)
MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1955

Name of Road	Average mileage operated during period	Operating Revenues				Operating Expenses				Total	Trans- portation	Total	Operating ratio 1955/1954	Net from railway operation	Net railway operating income						
		Pass.	Freight	Total (inc. misc.)	Total (inc. misc.)	Deprec.	Maint.	Way and Structures	Retire- ments							and Deprec.					
		1955	1954	1955	1954	1955	1954	1955	1954	1955	1954	1955	1954	1955	1954						
Colorado & Southern.....	Aug. 721	80	1,145	1,309	1,408	227	15	174	189	41	31	510	1,189	971	88.4	74.2	156	70	42	149	
Fl. Worth & Denver.....	Aug. 1,037	1,679	2,008	1,703	2,715	238	30	252	230	44	62	743	1,436	1,241	71.5	72.9	572	1,322	1,059	822	
Colorado & Wyoming.....	Aug. 1,400	235	362	291	23	21	27	28	11	1	1	112	176	159	48.5	54.7	186	102	84	59	
	8 mos. 40	1,520	2,427	1,704	278	121	95	254	213	8		852	1,498	1,145	61.7	62.1	929	517	402	260	
Columbus & Greenville.....	Aug. 168	107	111	140	21	34	23	24	6		5	34	100	133	90.3	95.2	11	17	...	2	
Dela ware & Hudson.....	Aug. 792	4,200	1,146	1,221	245	243	30	204	205	50	42	374	1,012	1,011	88.4	82.7	133	127	...	48	
Dela ware, Lackawanna & Western.....	8 mos. 792	31,872	34,210	31,946	4,105	4,568	391	5,874	6,278	1,434	688	11,787	24,192	25,427	70.7	79.6	10,019	3,666	6,399	3,788	
Denver & Rio Grande Western.....	Aug. 962	5,801	7,057	6,509	6,461	1,385	849	1,032	1,090	321	187	3,475	6,909	5,597	101.5	86.6	99	716	759	412	
Detroit & Mackinac.....	8 mos. 962	42,786	6,148	53,886	51,823	7,120	6,438	8,219	8,623	2,387	1,466	25,128	44,516	43,401	82.1	83.8	9,311	3,347	3,347	4,060	
Detroit & Toledo Shore Line.....	Aug. 2,165	6,458	344	7,060	6,868	769	831	100	946	936	288	1,999	2,078	4,305	4,320	61.0	62.9	2,755	1,387	1,387	1,344
Detroit, Toledo & Ironton.....	8 mos. 2,165	43,987	1,992	49,610	46,984	5,851	6,646	794	7,454	7,475	2,263	1,538	14,672	31,852	32,151	64.2	68.4	17,759	8,509	9,209	8,666
Duluth, Missabe & Iron Range.....	Aug. 232	1,422	198	198	43	40	3	31	23	9	3	44	133	120	67.2	60.7	65	44	26	35	
Duluth, South Shore & Atlantic.....	Aug. 50	633	3	1,451	1,305	288	320	21	183	75	30	321	972	930	67.0	71.2	479	311	198	182	
	8 mos. 50	5,207	5,692	5,103	606	643	31	523	469	160	138	1,622	3,683	2,878	54.7	56.4	2,537	820	709	620	
Duluth, Winnipeg & Pacific.....	Aug. 464	1,610	1,672	1,342	306	270	21	369	257	90	41	440	1,234	1,195	73.8	89.1	437	127	371	153	
Duluth, Missabe & Iron Range.....	8 mos. 569	6,683	7,744	12,003	12,544	215	191	2,154	2,125	734	326	3,431	8,594	8,749	62.5	72.9	5,150	2,604	3,072	1,938	
Duluth, South Shore & Atlantic.....	8 mos. 566	28,834	6	33,533	28,884	3,094	4,414	5,819	878	110	12	1,810	3,079	2,704	39.6	43.0	4,705	2,041	2,045	1,572	
Duluth, South Shore & Atlantic.....	8 mos. 553	4,806	28	5,094	4,623	1,096	1,053	84	1,032	995	181	226	1,657	2,145	53.9	62.7	15,460	8,396	6,899	3,933	
Duluth, Winnipeg & Pacific.....	Aug. 175	536	1	545	533	84	87	4	78	80	2	6	219	393	413	72.2	77.5	902	239	498	274
Elgin, Joliet & Eastern.....	8 mos. 236	3,388	7	3,905	3,692	525	623	35	552	536	17	47	1,716	2,902	2,962	74.3	80.2	1,003	305	115	144
Erie.....	8 mos. 2,224	92,227	613	13,888	12,758	2,088	2,147	211	2,043	1,125	80	357	1,305	1,561	88.3	88.1	2,322	6,491	4,490	940	
Florida East Coast.....	Aug. 571	1,506	320	2,027	1,945	294	43	389	532	102	74	815	1,696	2,189	83.7	87.5	20,890	6,834	8,659	8,400	
Georgia Railroad.....	8 mos. 321	695	4,016	23,662	22,189	3,713	354	3,999	3,968	788	610	8,474	17,367	16,075	73.4	80.6	6,295	1,551	3,036	1,258	
Georgia & Florida.....	8 mos. 332	2,275	121	4,518	5,523	827	92	76	137	268	23	1,901	514	4,303	38.6	50.0	160	169	559	557	
Grand Trunk Western.....	Aug. 952	4,535	7,349	16,831	24,325	33,268	31,665	2,806	26,784	29,317	5,735	3,500	56,177	126,664	126,007	74.2	78.1	43,967	23,165	17,629	13,127
Can. National Lines in New Eng.....	8 mos. 172	1,119	68	1,568	1,592	504	570	471	532	...	1	22	938	1,756	2,142	112.0	134.5	188	193
Great Northern.....	8 mos. 8,283	23,587	1,331	26,813	24,332	4,628	4,332	286	3,471	3,501	728	446	8,033	17,558	16,614	65.5	68.3	9,255	5,101	3,771	1,317
Green Bay & Western.....	Aug. 224	387	397	784	824	132	7	42	68	10	23	111	279	350	70.3	88.1	118	60	34	1	
Gulf, Mobile & Ohio.....	8 mos. 2,224	6,166	7,275	13,441	14,546	335	306	375	410	16	66	849	2,010	2,260	68.0	74.7	1,719	789	730	721	
Illinois Central.....	Aug. 6,531	20,844	24,105	44,949	48,250	3,731	406	4,221	3,523	2,260	215	16,477	40,233	40,623	72.9	75.0	14,965	5,776	6,546	5,576	
Illinois Terminal.....	Aug. 355	1,017	1,184	2,201	2,388	167	26	184	139	42	429	880	837	74.3	84.8	304	380	380	380
Kansas City Southern.....	8 mos. 355	6,618	7,835	14,453	15,653	1,336	1,305	1,221	1,332	353	353	2,977	3,559	56.6	57.7	1,645	753	673	665
Kansas, Oklahoma & Gulf.....	Aug. 327	389	410	799	829	78	7	26	27	71	706	8,563	16,855	15,945	55.9	57.7	12,930	5,885	5,326	5,035	
	8 mos. 327	3,195	...	3,213	3,402	438	509	62	283	11	224	101	221	263	55.9	64.0	1,734	67	67	52	
Lake Superior & Ishpeming.....	Aug. 149	657	871	1,528	1,718	58	10	53	50	16	2	148	292	219	33.5	48.0	580	323	295	167	
Lehigh & Hudson River.....	8 mos. 96	2,108	2,114	4,222	4,228	316	18	232	268	8	14	86	180	177	80.0	67.7	1,783	993	993	410	
Lehigh & New England.....	Aug. 178	599	605	1,204	1,210	82	6	176	128	40	17	219	546	446	90.2	81.7	67	218	275	30	
	8 mos. 179	4,871	4,916	4,394	610	639	67	1,113	1,113	318	138	1,580	3,979	3,713	80.9	84.5	937	851	658	629	
Lehigh Valley.....	Aug. 1,150	5,212	5,709	10,921	11,912	904	978	940	999	136	2,556	5,114	4,657	89.6	81.5	595	446	88	446
Long Island.....	8 mos. 360	1,080	1,200	2,280	2,480	807	779	710	750	133	153	2,476	4,437	4,149	83.8	82.1	8,198	1,662	5,468	3,119	
	8 mos. 360	8,811	29,626	40,482	36,383	5,406	5,275	690	7,641	7,495	1,012	153	19,596	34,249	33,575	84.6	82.3	6,233	2,471	1,346	2,215

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1955

Average mileage operated during period	Name of Road	Operating Revenues				Operating Expenses				Operating ratio 1955 1954	Net from railway operation 1955-1954	Railway tax accruals 1955-1954	Net railway operating income 1955-1954				
		Total (inc. misc.)				Total											
		Pass.	Freight	Total	Retire- ment	Deprec.	Total	Retire- ment	Deprec.								
753 8 mos.	Louisiana & Arkansas.....	59	2,206	1,938	221	19	301	253	92	640	1,352	511	546	372			
4,733 8 mos.	Louisiana & Arkansas.....	917	17,987	16,057	2,432	215	3,441	3,522	828	3,352	13,250	3,701	4,042	3,426			
4,733 8 mos.	Louisville & Nashville.....	5,271	109,276	130,293	15,650	22,385	1,924	24,075	29,835	6,646	2,838	39,328	47,195	108,511	14,639		
944 8 mos.	Maine Central.....	161	2,104	2,016	456	27	330	391	728	22	731	1,631	1,702	775	184		
944 8 mos.	Maine Central.....	845	16,668	16,848	3,346	358	217	2,699	3,170	623	162	5,924	12,846	17,711	1,508		
334 8 mos.	Midland Valley.....	...	209	182	39	46	14	11	4	5	57	123	135	59.1	20		
334 8 mos.	Midland Valley.....	...	1,576	1,358	324	318	46	93	29	41	429	963	944	62.7	43		
1,397 8 mos.	Minneapolis & St. Louis.....	5	2,101	2,009	263	335	28	273	262	76	99	624	1,386	1,414	63.8	70.4	
1,397 8 mos.	Minneapolis & St. Louis.....	30	13,665	13,624	2,237	2,311	223	2,207	2,141	609	801	4,603	10,760	10,812	78.7	79.4	
3,224 8 mos.	Minneapolis, St. Paul & St. Marie.....	118	4,085	4,424	759	764	51	691	594	118	84	1,284	2,977	3,026	72.9	68.4	
3,224 8 mos.	Minneapolis, St. Paul & St. Marie.....	690	25,733	25,590	5,610	5,571	442	4,889	5,002	969	674	9,313	21,593	22,288	83.9	87.1	
148 8 mos.	Mississippi Central.....	...	231	216	53	38	2	27	26	6	14	52	155	144	66.9	65.4	
148 8 mos.	Mississippi Central.....	...	1,648	1,603	417	469	18	212	216	46	114	395	1,221	1,284	74.1	80.1	
172 8 mos.	Missouri-Illinois.....	...	492	446	62	71	4	76	68	30	10	114	273	267	55.5	59.8	
3,241 8 mos.	Missouri-Kansas-Texas Lines.....	273	3,811	3,405	472	597	43	605	627	236	88	937	2,193	2,279	57.5	66.6	
3,241 8 mos.	Missouri-Kansas-Texas Lines.....	2,763	6,381	5,997	920	842	93	1,027	805	242	245	2,488	4,900	4,476	78.2	74.6	
6,917 8 mos.	Missouri Pacific.....	2,067	48,728	48,766	6,857	7,077	744	7,285	7,362	1,942	1,983	18,713	37,521	37,170	77.9	77.5	
6,917 8 mos.	Missouri Pacific.....	889	19,988	17,929	3,410	315	320	374	393	816	479	6,798	15,120	13,970	75.6	78.0	
1,104 8 mos.	International-Great Northern.....	6,343	147,009	140,357	23,640	24,178	2,491	28,370	25,544	6,427	3,856	52,582	113,715	112,612	77.4	80.0	
1,104 8 mos.	International-Great Northern.....	154	3,001	2,617	682	507	34	505	430	120	67	110	114	273	267	55.5	59.8
1,723 8 mos.	Gulf Coast Lines.....	1,158	22,567	21,150	4,506	4,037	313	3,872	3,789	975	514	8,695	18,159	18,159	82.2	85.9	
1,723 8 mos.	Gulf Coast Lines.....	89	3,681	3,322	674	670	49	540	501	113	97	1,255	2,689	2,529	73.9	76.1	
1,723 8 mos.	Gulf Coast Lines.....	662	28,304	27,626	5,272	5,499	372	3,987	4,102	912	704	9,293	20,509	20,521	72.4	75.3	
177 8 mos.	Monongahela.....	...	450	508	67	81	15	59	69	14	1	152	285	341	63.2	67.2	
177 8 mos.	Monongahela.....	...	3,787	3,776	499	527	129	448	500	109	6	1,326	2,371	2,450	62.6	64.9	
51 8 mos.	Montour.....	...	194	105	14	15	2	47	39	16	1	62	130	120	67.1	71.3	
51 8 mos.	Montour.....	...	1,112	1,108	114	121	19	352	401	132	8	427	972	1,041	87.5	93.9	
1,043 8 mos.	Nashville, Chatt. & St. Louis.....	740	18,016	23,982	3,177	3,867	372	3,091	3,226	1,109	911	1,388	15,488	17,925	86.0	73.0	
10,710 8 mos.	New York Central.....	8,646	66,679	58,887	8,864	8,031	688	11,116	10,151	2,204	1,028	27,642	51,678	48,680	77.5	82.7	
10,710 8 mos.	New York Central.....	65,501	497,553	470,503	59,885	66,961	7,862	83,905	92,180	18,036	8,708	214,515	392,255	408,873	78.8	86.9	
221 8 mos.	Pittsburgh & Lake Erie.....	64	3,765	2,605	499	432	104	917	842	283	69	1,154	2,822	2,689	74.9	80.3	
221 8 mos.	Pittsburgh & Lake Erie.....	314	25,681	24,714	3,485	3,365	213	2,733	2,560	2,763	560	5,433	23,040	21,460	65.6	68.4	
2,178 8 mos.	New York, Chicago & St. Louis.....	1,165	104,602	95,151	11,708	10,928	1,144	16,675	15,638	2,905	2,667	36,953	71,547	67,717	68.4	71.2	
1,769 8 mos.	New York, New Haven & Hartford.....	3,955	12,814	12,551	1,037	1,504	298	1,896	1,774	451	239	6,084	10,147	9,602	79.2	72.2	
1,769 8 mos.	New York, New Haven & Hartford.....	31,882	103,626	100,338	11,485	13,881	2,162	14,942	14,979	3,242	1,964	46,562	81,948	81,062	79.1	80.8	
21 8 mos.	New York Connecting.....	...	329	316	135	179	25	21	155	...	...	87	146	235	51.3	54.9
541 8 mos.	New York, Ontario & Western.....	...	493	464	138	121	196	84	155	...	...	260	546	512	110.7	103.2
541 8 mos.	New York, Ontario & Western.....	...	3,736	4,017	912	976	171	707	787	179	196	2,004	4,965	4,144	108.8	103.1	
120 8 mos.	New York, Susquehanna & Western.....	...	405	500	74	47	5	56	56	13	9	171	355	362	87.5	72.3	
120 8 mos.	New York, Susquehanna & Western.....	...	3,965	3,810	431	473	496	102	496	102	66	1,632	2,904	2,937	73.2	72.7	
2,126 8 mos.	Norfolk & Western.....	2,531	13,735	109,296	17,160	17,412	2,525	27,788	21,543	5,485	2,676	33,229	90,699	84,945	67.8	77.7	
605 8 mos.	Norfolk Southern.....	...	868	803	200	185	118	123	128	225	368	1,979	5,203	5,309	78.4	84.1	
605 8 mos.	Norfolk Southern.....	...	6,671	6,421	1,443	1,439	110	992	982	225	368	1,979	5,203	5,309	78.4	82.7	
6,866 8 mos.	Northern Pacific.....	729	17,201	15,682	3,003	2,500	477	3,040	2,676	552	350	6,140	13,371	12,649	77.7	80.7	
6,866 8 mos.	Northern Pacific.....	5,021	11,570	109,000	17,160	17,412	2,525	27,788	21,543	5,485	2,676	33,229	90,699	84,945	67.8	77.7	
329 8 mos.	Northwestern Pacific.....	...	31	9,883	9,191	21	334	769	32	46	2,810	6,587	6,351	66.6	69.1	53.5	53.5
329 8 mos.	Northwestern Pacific.....	...	69	69	18	22	3	12	11	...	...	138	328	392	61.9	56.8
132 8 mos.	Oklahoma City-Ada-Atoka.....	...	631	869	130	167	19	12	11	17	32	52	52	7	7
132 8 mos.	Oklahoma City-Ada-Atoka.....	...	631	869	130	167	19	12	11	17	32	52	52	7	7
10,037 8 mos.	Pennsylvania.....	10,001	83,056	73,163	8,965	8,436	1,388	18,464	15,465	2,992	1,292	36,109	67,925	60,256	81.8	82.4	
10,037 8 mos.	Pennsylvania.....	469	6,003	5,863	665	667	11	128	123	235	9,412	26,715	496,934	482,904	94.6	88.1	
358 8 mos.	Pennsylvania-Reading Seashore Lines.....	325	4,765	1,291	6,211	6,358	1,596	1,555	196	175	92	3,846	6,736	6,782	108.4	108.4	
358 8 mos.	Pennsylvania-Reading Seashore Lines.....	2,381	6,211	6,255	1,596	1,555	196	898	830	175	92	3,846	6,736	6,782	108.4	108.4	

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

Average miles operated during period	Name of Road	Operating Revenues				Maint. Way and Structures				Operating Expenses				Net from operation	Railway operating income 1955	Net railway income 1954	
		Operating Revenues		Total		Total		Total		Total		Retire- ment					
		Pas- senger	Freight	1955	1954	1955	1954	1955	1954	1955	1954	1955	1954				
Aug. 8 mos.	Pittsburg & Shawmut.....	171	1,181	36	33	28	28	6	30	112	112	65	65	195	28	28	
	Pittsburg & West Virginia.....	132	1,636	206	206	24	137	36	293	894	1,063	732	84.0	326	8	106	
	Pittsburgh & West Virginia.....	1,304	5,536	5,567	4,833	864	783	191	1,000	977	291	486	1,411	3,887	77.5	146	
	Reading.....	1,304	8,711	535	9,771	8,943	1,585	1,156	1,937	1,866	415	1,553	3,835	7,936	7.124	604	
Aug. 8 mos.	Reading.....	1,304	67,052	4,447	76,271	71,996	10,040	8,957	1,580	14,667	14,082	3,355	1,260	30,050	59,453	68.96	
	Richmond, Fredericksburg & Potomac Aug. 8 mos.	118	1,075	408	2,037	264	286	30	310	339	67	22	718	1,439	1,474	19.1	
	Richmond, Fredericksburg & Potomac Aug. 8 mos.	118	1,075	3,959	18,150	17,882	2,284	2,379	203	2,590	2,690	532	178	5,897	12,001	12,338	66.1
	Butland.....	392	2,866	...	3,132	3,011	625	89	42	52	14	24	149	344	78.6	94	34
Aug. 8 mos.	Sacramento Northern.....	267	2,238	...	2,247	2,288	58	35	3	13	21	3	2	79	187	152	75.6
	Sacramento Northern.....	267	1,545	...	1,612	1,679	459	562	35	116	117	25	18	539	1,255	1,351	77.9
	St. Louis.....	4,610	8,918	460	10,170	9,194	1,592	1,283	235	1,796	1,617	526	357	3,811	8,028	7,361	78.9
	St. Louis-San Francisco.....	4,604	71,404	3,209	80,632	76,700	11,806	12,203	13,106	14,316	4,214	2,911	29,475	62,382	63,533	77.4	
Aug. 8 mos.	St. Louis-San Francisco & Texas.....	157	3,733	4	399	465	68	66	4	30	34	1	25	159	294	287	73.6
	St. Louis-San Francisco & Texas.....	157	3,028	30	3,230	3,479	370	28	253	265	9	212	1,258	2,263	2,155	70.0	
	St. Louis Southwestern Lines.....	1,561	5,839	24	6,054	4,719	734	664	75	593	593	1,074	1,622	3,290	3,118	54.4	
	St. Louis Southwestern Lines.....	1,561	42,518	151	44,117	39,266	5,231	5,464	527	4,490	5,071	852	1,405	12,831	25,466	25,681	57.7
Aug. 8 mos.	Seaboard Air Line.....	4,064	9,639	1,104	11,663	11,571	1,571	1,568	179	2,198	2,012	548	369	3,923	8,576	8,265	73.5
	Seaboard Air Line.....	4,064	85,190	8,727	101,881	101,211	15,360	15,456	1,497	18,398	18,022	4,363	2,930	32,927	73,763	73,685	72.4
	Southern Railway.....	6,289	20,042	1,487	23,049	20,974	3,111	2,955	1,077	3,878	3,658	789	428	7,069	15,520	14,839	66.9
	Southern Railway.....	6,289	159,542	10,371	183,024	162,322	22,899	23,464	2,834	30,351	30,182	6,161	3,235	55,078	119,391	118,002	65.2
Aug. 8 mos.	Alabama Great Southern.....	326	1,528	582	1,767	1,587	248	248	248	2,438	2,219	466	289	3,973	9,280	8,743	68.0
	Alabama Great Southern.....	326	12,328	582	14,062	11,587	1,887	1,815	248	2,438	2,219	466	289	3,973	9,280	8,743	68.0
	Cinn., New Orleans & Tex. Pac.....	337	3,380	215	3,797	3,362	551	468	59	582	587	143	86	971	2,359	2,059	62.1
	Cinn., New Orleans & Tex. Pac.....	337	29,707	1,454	32,828	28,042	4,346	3,851	417	5,048	4,793	1,087	631	7,572	18,838	17,440	57.4
Aug. 8 mos.	Georgia Southern & Florida.....	475	7,740	67	866	755	224	184	9	76	72	8	8	294	628	581	72.5
	Georgia Southern & Florida.....	475	6,053	576	7,207	6,922	2,051	1,381	19	134	140	42	135	2,325	5,443	4,695	55.5
	New Orleans & Northeastern.....	204	2,933	...	3,099	2,940	1,361	1,151	151	1,095	1,112	338	164	1,791	4,841	5,231	54.3
	New Orleans & Northeastern.....	204	7,932	...	8,834	8,040	1,325	1,617	151	1,095	1,112	338	164	1,791	4,841	5,231	54.3
Aug. 8 mos.	Southern Pacific.....	8,127	44,140	3,311	50,317	44,539	6,391	5,074	576	10,161	9,199	1,991	976	19,657	39,444	34,414	78.4
	Southern Pacific.....	8,129	310,428	22,523	354,570	328,678	43,417	39,777	3,934	72,554	69,786	15,431	7,182	136,908	276,235	263,900	77.9
	Texas & New Orleans.....	4,315	10,615	1,857	10,822	10,232	1,718	1,718	1,156	1,800	1,560	156	259	4,154	9,420	8,358	79.4
	Texas & New Orleans.....	4,315	81,358	3,743	90,354	84,294	16,459	15,297	1,198	12,317	12,032	1,110	781	31,183	66,777	66,777	53.3
Aug. 8 mos.	Spokane International.....	150	2,338	...	2,426	2,189	395	438	3	21	206	77	48	571	1,326	1,360	54.6
	Spokane International.....	150	333	...	426	2,189	395	438	3	21	206	77	48	571	1,326	1,360	54.6
	Spokane, Portland & Seattle.....	947	2,895	118	3,111	2,773	362	387	49	390	381	108	29	888	1,770	1,763	56.9
	Spokane, Portland & Seattle.....	947	19,538	675	21,423	19,114	3,062	2,785	386	3,063	3,025	867	212	6,959	14,087	13,372	65.8
Aug. 8 mos.	Tennessee Central.....	286	3,292	...	3,399	2,966	577	610	43	494	468	160	120	1,089	2,417	2,325	72.9
	Tennessee Central.....	286	1,125	...	1,105	72	2	3	...	10	11	3	9	58	217	217	20.6
	Texas & Northern.....	8	1,058	...	1,132	582	31	31	3	79	69	22	9	58	217	217	19.8
	Texas & Northern.....	8	1,058	...	1,132	582	31	31	3	79	69	22	9	58	217	217	19.8
Aug. 8 mos.	Texas & Pacific.....	1,831	5,712	390	6,666	6,095	1,098	927	97	1,107	1,110	251	195	2,207	4,945	4,659	74.2
	Texas & Pacific.....	1,831	46,714	2,622	52,610	51,474	8,254	8,374	725	8,157	7,955	1,958	1,530	17,551	38,717	36,137	72.1
	Texas Mexican.....	161	1,945	...	2,084	1,196	44	44	9	27	25	63	6	242	79	78	12.9
	Texas Mexican.....	161	2,951	...	3,084	1,738	378	474	9	27	25	63	6	242	79	78	12.9
Aug. 8 mos.	Toledo, Peoria & Western.....	239	597	...	604	530	109	96	7	55	39	11	47	145	397	349	65.7
	Toledo, Peoria & Western.....	239	4,580	...	4,647	4,612	701	765	54	449	442	91	371	1,110	2,976	2,923	64.0
	Union Pacific.....	9,813	42,595	3,303	49,310	44,758	5,949	6,511	730	8,000	8,115	1,656	934	15,905	33,082	31,586	67.0
	Union Pacific.....	9,813	285,344	20,627	330,193	312,341	45,749	40,235	4,492	60,122	58,521	13,029	8,539	111,442	248,125	236,738	68.1
Aug. 8 mos.	Utah.....	99	719	...	751	595	112	117	10	225	28	8	6	242	79	78	12.9
	Utah.....	99	719	...	751	595	112	117	10	225	28	8	6	242	79	78	12.9
	Ann Arbor.....	294	770	...	822	755	103	100	17	157	137	31	28	323	638	611	74.6
	Ann Arbor.....	294	5,972	...	6,134	5,819	768	773	97	1,090	1,069	245	230	2,611	4,871	4,861	79.4
Aug. 8 mos.	Western Maryland.....	846	4,071	6	4,356	3,999	575	475	52	654	637	206	102	1,223	2,787	2,529	64.0
	Western Maryland.....	846	28,463	...	30,252	27,497	4,302	3,835	411	5,000	5,222	1,633	802	9,054	20,919	20,355	69.2
	Western Pacific.....	1,193	4,404	221	4,731	4,350	887	833	102	660	652	184	200	1,537	3,544	3,247	74.9
	Western Pacific.....	1,193	32,148	1,639	34,733	31,463	6,850	6,431	696	5,134	5,160	1,420	1,580	10,712	25,931	23,740	75.0
Aug. 8 mos.	Wisconsin Central.....	1,042	2,671	...	2,599	2,901	2,567	390	597	47	410	400	72	1,045	2,029	2,233	70.0
	Wisconsin Central.....	1,042	18,591	320	20,071	19,363	3,104	3,334	334	3,060	3,278	699	584	7,736	15,373	15,944	76.6
	Wisconsin Central.....	1,042	18,591	320	20,071	19,363	3,104	3,334	334	3,060	3,278	699	584	7,736	15,373	15,944	76.6
	Wisconsin Central.....	1,042	18,591	320	20,071	19,363	3,104	3,334	334	3,060	3,278	699	584	7,736	15,373	15,944	76.6

Letters from Readers

Why Not Use Type F Couplers?

WHITE PLAINS, N.Y.

TO THE EDITOR:

It is now three years since the new Type F coupler received AAR approval for unlimited application to freight cars.

I have no personal interest in this coupler, but as former chairman of the AAR Committee on Couplers and Draft Gears it seems to me unfortunate that so many railroads are continuing to build new freight cars equipped with the old and now obsolete Type E coupler.

The Type F coupler was designed and produced under the direction of the Mechanical Committee of the Standard Coupler Manufacturers in response to a demand from the Coupler and Draft Gear Committee, acting on behalf of the railroads, for a coupler that would fully meet the much more severe requirements of present day freight service. Exhaustive tests, both laboratory and service, have shown that the manufacturers completely succeeded in carrying out their assignment.

This Type F coupler has all the advantages of both the Type E rigid shank and the alternate standard swivel shank couplers, and none of the disadvantages of either. It has greatly increased strength and eliminates more than half of the present free slack, leaving only $\frac{3}{8}$ in. of slack per pair of couplers.

Also incorporated are practically all of the outstanding features of the latest Type H Tightlock coupler for passenger service, namely, complete vertical interlocking of mated coupler heads which serves to keep cars in alignment and resist jackknifing and overturning in derailments; longer life due to restriction of vertical movement between mated couplers; and elimination of vertical slip-overs.

Unlike the Type E, the Type F cannot be opened by bouncing of cars, and the dangerous cross-key is eliminated entirely.

The strength of the Type F coupler shank is more than 70% greater even than that of the Type H Tightlock coupler, the cost of which is much greater.

One additional important feature is possessed by the Type F coupler only. It is not often that an improved device is offered which automatically extends the advantage of this improvement to all older devices with which it may be associated, but we find this in the Type F coupler. In the event of a pull-out, the Type F coupler will support the mate coupler and prevent it from falling to the track, no matter whether it be another Type F coupler or an older type coupler not provided

with this protection. This feature of the Type F coupler will undoubtedly prevent many derailments.

ICC Accident Bulletin No. 122, covering the year 1953, the latest available, shows that broken wheels of all kinds caused a total of 266 derailments in that year, whereas coupler and draft rigging failures caused a total of 332 derailments in the same period.

Of the latter failures it is estimated that at least 193 would have been prevented by the use of Type F couplers.

The railroads have spent several hundred million dollars for diesel locomotives in the past few years, but

it takes more than diesels to run a railroad.

Why should any railroad in this day and age build new freight cars and equip them with couplers designed for conditions that existed 25 years ago? This appears especially shortsighted in view of the fact that if the car when built is not designed for application of the improved Type F coupler such application will cost a great deal more if made later, and this will almost certainly be required by the AAR within a comparatively few years.

H. W. FAUS

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New York Central System

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EVERYTHING AND THE KITCHEN SINK. 160 pages, illustrations. Farrar, Straus & Cudahy, Inc., 101 Fifth ave., New York 3. \$4.

Published in commemoration of the centennial of the Crane Company, this book tells how American industry during just one century has completely revolutionized the life and hopes of America, by constantly seeking for better ways to do things. The railroad industry is among those saluted.

HISTORY OF THE BROTHERHOOD OF MAINTENANCE OF WAY EMPLOYEES; ITS BIRTH AND GROWTH, 1887-1955, by D. W. Hertel. 308 pages, illustrations. Ransdell, Inc., 810 Rhode Island ave., N.E., Washington, D.C. \$3.50.

This is the story of the pioneer railroad workers who built our railroads' tracks and bridges, of the courageous men who founded the brotherhood, and of those who brought it to its high place among labor organizations today. It traces the development of the brotherhood from its birth, through many crises, including World Wars I and II and the great business depression, to its recognized status today. The book contains many photographs of the "then and now" type, showing how maintenance operations were carried on in the old days and how they are handled today with modern machines. Appendices contain historical documents, a chronology of dates and events, a list of conventions of the Grand Lodge, a roster of past and present Grand Lodge officers, and statistics on employment and earnings of maintenance of way employees.

PRINCIPLES OF INLAND TRANSPORTATION, by Stuart Daggett. Fourth edition, 788 pages, maps, charts, diagrams. Harper & Brothers, 49 E. 33rd st., New York 16. \$6.

The new edition of this text which in the past has been widely used for college courses in transportation, and which has been out of print since the war, covers the transportation system of the United States by water, rail, motor, air and pipe line, including routes and commodity flows, legal responsibilities of carriers, rates and classifications, problems of coordination and consolidation, carrier regulation, and public aid. Features which it is claimed differentiate this text from others in the field include fuller discussion of the extent of use, as opposed to the physical character, of the transport mechanism, fuller discussion of routes and commodity flows; more detailed treatment of the legal basis for regulatory control and state vs. federal authority; and greater attention to types of service of carriers and common practices in operation. Among the new topics

discussed are the character of air movements, refrigeration car technique, traffic associations, transit rules, interchange of equipment and consolidation of air and motor systems, air terminals, exemptions from legislation, trip leasing, and wartime control.

PAMPHLETS

SHIP THROUGH NEWPORT NEWS VIRGINIA. 16 pages, illustrations, maps, cartoons. World Commerce Department, Chesapeake & Ohio Railway, Newport News, Va.

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METHOD AND PROCEDURE FOR CONDUCTING INVESTIGATIONS AND ASSESSING DISCIPLINE, BASED UPON A STUDY OF VARIOUS AWARDS BY THE NATIONAL RAILROAD ADJUSTMENT BOARD (REVISED TO MARCH, 1955), by I. L. Fardal, Division Superintendent, Soo Line, Gladstone, Mich., \$1.

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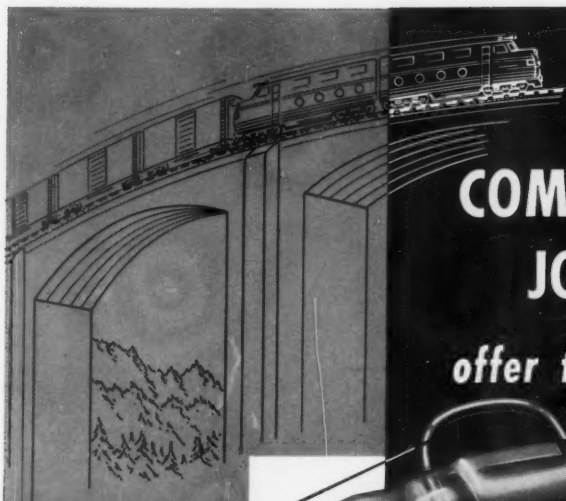
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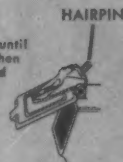


2



3

Partially close lid until hairpin is free. Then remove hairpin and close lid all the way. If necessary to remove lid, open to position (3) to insert hairpin, lift to position (2) to remove hinge pin, and lift off lid.



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